Brazilian Amazon APD Grouped Project



Project title	Brazilian Amazon APD Grouped Project
Project ID	ID 2551
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Monitoring period	01st-January-2023 to 31st-December-2023
(CCB) GHG accounting period	02nd-August-2021 to 01st-August-2121; 100-year lifetime
Original date of issue	N/A
Most recent date of issue	12-August-2025
Version	2.1
VCS Standard version	VCS v4.7
CCB Standards version	CCB standard v3.1
Project location	Brazil, municipality (state) PAI #1: Aripuanã (MT) PAIs #2-5: Sena Madureira (AC) PAI #6: Manicoré (AM) PAIs #7-15: Pará (PA) state, encompass 6 municipalities: Dom Eliseu, Rondon do Pará, Paragominas, Tomé-Açu and Ipixuna do Pará Brazilian Legal Amazon
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History of CCB Status	1st Verification (02 August 2021 until 19 October 2021) statement issued on 25th August 2022 2nd Verification (20 October 2021 until 31 December 2022) statement issued on 24-11-2023 3rd Verification (1st January 2023 until 31st December 2023)
Gold Level criteria	**Exceptional Biodiversity Benefits** – Sustained by meeting the vulnerability criteria established in the CCB standard. Three Endangered (EN) species (*Ateles chamek, Inia geoffrensis* and *Pteronura brasiliensis*) and two Critically Endangered (CR) (*Psophia obscura* and *Cebus kaapori*) species are found within the project area. These species trigger the vulnerability criteria and classify the project area as a Key Biodiversity Area (KBA). The project aims the promotion of species conservation through the maintenance of forest habitats and avoidance of hunt pressure.
Prepared by	**brCarbon Serviços Ambientais LTDA**

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1 SUMMARY OF PROJECT BENEFITS

1.1 Unique Project Benefits

Table 1. Unique Project Benefits

Outcome or Impact	Achievements during the Monitoring Period	Section Reference	Achievements during the Project Lifetime
1) Digital Inclusion: In many cases, existing communities within the project area live in isolated conditions, without access to means of communication and travel days to the nearest city. This puts them in a vulnerable condition, negatively affecting their economy, health, education, well-being and even citizenship. The project will install repeating towers to provide internet and an internet access point in schools. Thus, it is expected to reduce the community's vulnerability condition, favoring their access to information, educational processes, health, economics and public services. The internet will be a fundamental part of the social engagement processes, continuous communication with communities and the	46 solar panels deployed. 23 battery banks deployed.	2.2.1 4.1.1 4.1.3	12 towers (60m high) installed. 1 tower (72m high) installed. 82 solar panels deployed. 41 battery banks deployed. 70 km of optic fiber installed.

feedback and grievance redress procedure. The number of towers and Internet access points provided, and the total amount of resources invested during a specific monitoring period will be reported in activity reports and monitoring reports.			
2) Strengthen Local Social Organizations (associations, female groups, and others): In the communities where the project operates, the population normally faces a condition of high social vulnerability and many difficulties in exercising citizenship. This means that they often struggle to access social and individual rights, as well as public services, such as education, health and others. In this sense, dealing with issues related to citizenship contributes to the development of better conditions for the formation and strengthening of social organization in territories and communities.	53 People (38 women) 01 Meeting 04 Workshops 05 Groups supported	2.2.1 4.1.1 4.1.3	53 People (38 women) 01 Meeting 04 Workshops 05 Groups supported

1.2 Standardized Benefit Metrics

Table 2. Standardized Benefit Metrics

Category	Metric	Achievements during Monitoring Period	Section Reference	Achievements during the Project Lifetime
GHG emission reductions & removals	Net estimated emission removals in the project area, measured against the without-project scenario	Not applicable	Not applicable	Not applicable
	Net estimated emission reductions in the project area, measured against the without-project scenario	2,475,530 tCO2	3.2.4	16,820,450tCO 2
Forest cover	For REDD projects: Number of hectares of reduced forest loss in the project area measured against the without-project scenario	4,458.62 ha	3.2.1.1	30,062.45 ha
	For ARR projects: Number of hectares of forest cover increased in the project area measured against the without-project scenario	Not applicable	Not applicable	Not applicable
Improved land management	Number of hectares of existing production forest land in which IFM practices have occurred as a result of the project's activities, measured against the without-project scenario	Not applicable	Not applicable	Not applicable
	Number of hectares of non-forest land in which improved land management has occurred as a result of the project's activities, measured against the without-project scenario	Not applicable	Not applicable	Not applicable
Training	Total number of community members who have improved skills and/or knowledge resulting from training provided as part of project activities	No action was taken in this monitoring period	2.2.1 4.1.1 4.1.3	79 community members
	Number of female community members who have improved skills and/or knowledge resulting from training	Not applicable	2.2.1 4.1.1 4.1.3	24 community members

	provided as part of project activities of project activities			
Employment	Total number of people employed in of project activities,[1] expressed as number of full-time employees[2]	06 people	2.2.1 4.1.1 4.1.3	10 people
	Number of women employed in project activities, expressed as number of full-time employees	02 women	2.2.1 4.1.1 4.1.3	04 women
Livelihoods	Total number of people with improved livelihoods[3] or income generated as a result of project activities	No action was taken in this monitoring period	2.2.1 4.1.1 4.1.3	166 people
	Number of women with improved livelihoods or income generated as a result of project activities	Not applicable	2.2.1 4.1.1 4.1.3	83 women
Health	Total number of people for whom health services were improved as a result of project activities, measured against the without-project scenario	No action was taken in this monitoring period	2.2.1 4.1.1 4.1.3	529 people
	Number of women for whom health services were improved as a result of project activities, measured against the without-project scenario	Not applicable	2.2.1 4.1.1 4.1.3	300 women
Education	Total number of people for whom access to, or quality of, education was improved as a result of project activities, measured against the without-project scenario	127 people	2.2.1 4.1.1 4.1.3	219 people

[1] Employed in project activities means people directly working on project activities in return for compensation (financial or otherwise), including employees, contracted workers, sub-contracted workers, and community members that are paid to carry out project-related work.
[2] Full time equivalency is calculated as the total number of hours worked (by full-time, part-time, temporary and/or seasonal staff) divided by the average number of hours worked in full-time jobs within the country, region, or economic territory (adapted from UN System of National Accounts (1993) paragraphs 17.14[15.102]; [17.28])
[3] Livelihoods are the capabilities, assets (including material and social resources) and activities required for a means of living (Krantz, Lasse, 2001. *The Sustainable Livelihood Approach to Poverty Reduction*. SIDA). Livelihood benefits may include benefits reported in the Employment metrics of this table.

	Number of women and girls for whom access to, or quality of, education was improved as a result of project activities, measured against the without-project scenario	64 women	2.2.1 4.1.1 4.1.3	119 women
Water	Total number of people who experienced increased water quality and/or improved access to drinking water as a result of project activities, measured against the without-project scenario	172 people	2.2.1 4.1.1 4.1.3	372 people
	Number of women who experienced increased water quality and/or improved access to drinking water as a result of project activities, measured against the without-project scenario	90 women	2.2.1 4.1.1 4.1.3	106 women
Well-being	Total number of community members whose well-being4 was improved as a result of project activities	305 community members	2.2.1 4.1.1 4.1.3	1,375 community members
	Number of women whose well-being was improved as a result of project activities	156 women	2.2.1 4.1.1 4.1.3	636 women
Biodiversity conservation	Change in the number of hectares significantly better managed by the project for biodiversity conservation,[5] measured against the without-project scenario	6,233.84 ha	5.3.1	30,750.5 ha
	Number of globally Critically Endangered or Endangered species[6] benefiting from reduced threats as a	1 species	5.4	5 species

[4] Well-being is people's experience of the quality of their lives. Well-being benefits may include benefits reported in other metrics of this table (e.g. Training, Employment, Health, Education, Water, etc.), but could also include other benefits such as empowerment of community groups, strengthened legal rights to resources, conservation of access to areas of cultural significance, etc.
[5] Biodiversity conservation in this context means areas where specific management measures are being implemented as a part of project activities with an objective of enhancing biodiversity conservation.
[6] Per IUCN's Red List of Threatened Species

	result of project activities,[7] measured against the without-project scenario			

2 PROJECT DETAILS

2.1 Summary Description of the Implementation Status of the Project

2.1.1 Summary Description of the Project (VCS, 2.1, 3.6; CCB, G1.2)

The Brazilian Amazon REDD+ APD Grouped Project (hereafter called GPD) reduces GHG emission avoiding deforestation, mitigating climate change, protecting biodiversity, and generating social benefits to local communities through sustainable territorial development.

This report seeks to verify the third monitoring period of the Brazilian Amazon REDD+ APD Grouped Project. During this monitoring period (1-January-2023 to 31-December-2023) PAIs #1 to #15 were monitored, having contributed to a net emission reduction of 2,475,530 tCO2 and 4,458.62 ha of avoided deforestation.

The carbon measurement process included a variety of technologies and approaches. For above ground biomass estimates, BRC used field surveys and LiDAR remote sensing onboard an unmanned aerial vehicle (UAV), associated with field forest inventories, which significantly increased the project's sampled area and the estimates' accuracy. The belowground biomass was estimated based on a transformation factor from literature. To measure other carbon pools such as litter, SOC and deadwood, BRC collected samples to estimate values.

Leakage mitigation actions were related to leakage monitoring, estimation of GHG emissions attributable to activity shifting and deduction of the project's net GHG emissions reduction in a specific monitoring period. This project activity was also associated with advocacy with landowners focusing on the reduction of GHG emissions due to activity shifting leakage in the present and future monitoring periods. In this third monitored period, a total of 63 properties were monitored, resulting in the deduction of a value equivalent to 131,980 tCO_2e for activity shifting leakage.

For all project activity instances, already verified or under verification process, BRC took legal steps to ensure that the climate, community, and biodiversity benefits will be maintained beyond the project

[7] In the absence of direct population or occupancy measures, measurement of reduced threats may be used as evidence of benefit

lifetime. Each PAI has a legal agreement (APPENDIX_LEGAL-AGREEMENTS) that was signed with the landowner to continue the management practices that will lead to the project area conservation for at least 30 years in the initial instances, and 40 years to the new instances according the standards new rules, and guarantee the permanence of the carbon stocks in the post project scenario and, as well, the community and biodiversity benefits. Using satellite images, BRC tracks deforestation and forest degradation, including wildfires, in the project area, and leakage belt.

The biodiversity surveys were carried out in the rainy season (February 15th to March 13th in Pará and April 19th to May 2nd in Mato Grosso). These periodic field surveys were fundamental to ensure the project goals effectiveness and reduce internal risks to biodiversity, such as local extinctions, and other ecological disturbances related with forest degradation.

Social activities were focused on strengthening local culture, empowerment, and inclusion of young people on social organization, and agricultural production, by structuring the manioc flour value chain for example. These actions are better described in section 4.1 of this document. Besides specific actions on each PAI, BRC structure is divided into teams inside each state/region where the project is being implemented, so there are three teams responsible for the PAIs, one in Acre (PAIs #2 to #5), one in Amazonas/Mato Grosso (PAI #1 and PAI #6) and one in Pará (PAIs #7 to #15), and this form of organization ensures that the work is done looking for each community in a singular way, even if they share similar challenges. This strategy makes the projects more sensible to individual issues in each community.

2.1.2 Audit History (VCS, 4.1)

Table 3. Audit Information

Audit Type	Period	Program	VVB Name	Number of years
Validation/ 1st Verification	02-August-2021 to 19-October-2021	VCS / CCB	Earthood Services Private Limited	3 months
2nd Verification	20-October-2021 to 31-December-2022	VCS / CCB	RINA Services S.p.A	One year and 2 months
3rd Verification	01-January-2023 to 31-December-2023	VCS / CCB	EcoLance Private Limited	One year

2.1.3 Sectoral Scope and Project Type (VCS, 3.2)

Table 4. Sectoral Scope and Project

Sectoral Scope	14: Agriculture, forestry, and other land use
AFOLU Project Category	REDD+
Project Activity Type	Avoiding Planned Deforestation (APD)

2.1.4 Project Proponent (VCS, 3.7; CCB, G1.1)

Table 5. Project Proponent

Organization name	brCarbon Serviços Ambientais LTDA
Contact person	Mr. Marco Tuoto
Title	CEO
Address	Av. Cezira Giovanoni Moretti 655, sala 7, AgTech Garage, Reserva Jequitibá - Piracicaba, São Paulo
Telephone	+55 19 3424-3583
Email	diretoria@brcarbon.com.br

2.1.5 Other Entities Involved in the Project

Table 6. Yaco2 Gestão e Comércio de Carbono details

Organization name	**Yaco2 Gestão e Comércio de Carbono**
Role in the project	Implementation partner and landowner of **PAIs #1-5**
Contact person	Mr. Moacir Eloy Corecetta Batista
Title	Person
Address	Av. Bezerra Sabino de Queiroz, 7471, Bairro Jardim Araucária, Vilhena – RO. CEP 76987-576
Telephone	+55 69 9969 1707
Email	madbatista@madbatista.com.br

Table 7. Incorporadora Manicoré LTDA details

Organization name	**Incorporadora Manicoré LTDA**
Role in the project	Implementation partner and landowner of **PAI #6**.
Contact person	Mr. Rogerio Oliveira
Title	Juridic person
Address	Av. Eduardo Ribeiro, 549, Bairro Centro, Cidade de Manicoré, AM, ZIP 69.280-000
Telephone	+55 69 9969-1707
Email	luizrogerio_oliveira@me.com

Table 8. Mr. Gilson Antônio Moreira Machado details

Organization name	**Mr. Gilson Antônio Moreira Machado**
Role in the project	Implementation partner and landowner of **PAIs #7-8**.
Contact person	Bruno Machado
Title	Person
Address	Várzea Alegre extension line. 09. Vila Nova. Ipixuna do Pará, PA. ZIP 68.637-0000
Telephone	+55 91 9293-3163
Email	nelorebm@gmail.com

Table 9. Floraplac Group details

Organization	**Floraplac Group**
Organization name	**Floraplac Industria LTDA**

Address	Colonia do Uraim Rod. No number. KM 01 – ZIP 68.627-400 – Industrial District – Paragominas. PA
Telephone	+55 (91) 3521-1310
Organization name	**Rio Concrem Industrial LTDA**
Address	BR-010 Rod. KM 30 – ZIP 68.633-000 – Dom Eliseu. PA
Telephone	+55 91 3351-005
Contact Person	Mr. Carlos Guimarães
Title	**PAI's #9 to #14** landowner
Email	juridico@floraplac.com

Table 10. Mr. Adão Ribeiro Soares details

Organization name	**Mr. Adão Ribeiro Soares**
Role in the project	Implementation partner and landowner of **PAI #15**.
Contact person	Adão Ribeiro Soares
Title	Person
Address	do Lago rod. Km 01. Jacundá, PA.
Telephone	+55 94 99182-6647
Email	adaoribeirosoares@hotmail.com

2.1.6 Project Start Date (VCS, 3.8)

Table 11. Project Start Date

Project start date	02-August-2021
Justification	The GPD start date is August 2nd, 2021, which corresponds to the implementation of the area protection plan (this project). This

	milestone is characterized by the legal agreement signature with **PAIs #1-5** landowner. This milestone represents the beginning of the protection plan and the date on which activities that led to the generation of GHG emission reductions were implemented.

2.1.7 Benefits Assessment and Project Crediting Period (VCS, 3.9; CCB, G1.9)

Table 12. Benefits Assessment and Project Crediting Period

Crediting Period	20-August-2021 to 01-July-2121
Start Date of First or Fixed Crediting Period	20-August-2021
Total Number of Years of Crediting Period	100 years
CCB Benefits Assessment Period	100 years

2.1.8 Project Location (VCS, 3.11; CCB, G1.3)

The GPD geographic region covers the entire Amazon Biome and has a comprehensive geographical boundary whose objective is to encompass all rural properties with surplus of native vegetation, subject to legal suppression for the implementation of commercial activities, mainly related to pastures or annual crops.

The grouped project encompasses nine Brazilian states: Acre, Amapá, Amazonas, Pará and Roraima, and part of the territory of Maranhão, Mato Grosso, Rondônia and Tocantins (Legal Amazon).

PAI #1 is located in Mato Grosso state (MT), and PAIs #2-5 are in Acre State (AC), PAI #6 is located in Amazonas State (AM), and the PAIs #7-15 are located in Pará State (PA). The table below shows the centroid geographical coordinate of all project activity instances. Coordinates are also submitted separately as a KML file (APPENDIX_GIS-DATA).

Table 13. Brazilian Amazon GPD PAIs #1-15 location

PAI	Property name	Municipality	Geodetic coordinate	
			Latitude	Longitude
Previous Project Activity Instances				
#1	Castanhal	Aripuanã (MT)	-9.91	-59.41
#2	Katianã	Sena Madureira (AC)	-10.27	-69.53
#3	Palmares	Sena Madureira (AC)	-10.10	-69.31
#4	Porongaba	Sena Madureira (AC)	-10.05	-69.04
#5	Potiguar	Sena Madureira (AC)	-10.23	-69.45
#6	Lagoa Grande II	Manicoré (AM)	-6.35	-60.10
#7	Nubia Floresta	Ipixuna do Pará (PA)	-2.78	-48.00
			-2.76	-48.04
#8	Floresta 1	Ipixuna do Pará (PA)	-2.77	-48.04
#9	Ribeiro Rondon	Rondon do Pará (PA)	-4.30	-48.66
#10	D' graus I	Ipixuna do Pará (PA)	-3.14	-48.27
#11	D' graus II	Ipixuna do Pará (PA)	-3.14	-48.24
#12	D' graus VI	Tomé-Açu (PA)	-3.18	-48.33
#13	Nova Esperança	Tomé-Açu (PA)	-3.15	-48.37
#14	São Domingos	Paragominas (PA)	-3.65	-48.13
#15	Capinzal 1	Dom Eliseu (PA)	-3.80	-48.19

Table 14. PAIs #1 to #15 information.

Instance	Property Name	Property area (ha)	Project area (ha)	Landholder details and user rights	
				SICAR number	Number of squatter families
PAI #1	Faz. Castanhal	5520.014	990.589	MT-5101407-4CACB40D0AE24939A317398F5FC45192	No
PAI #2	Faz. Katianã	25485.868	4728.046	AC-1200500-448F.55FB.03DB.45E1.B562.5DEC.2812.CB2D	No
PAI #3	Faz. Seringal Palmares	26918.516	4534.340	AC-1200500-9B87.9BF4.D62A.42C5.90B9.438C.2EED.3BB7	No
PAI #4	Faz. Seringal Porongaba	31265.604	4199.315	AC-1200500-0240.2E7C.2004.4705.AFF5.AC02.5939.EEE1	No
PAI #5	Faz. Seringal Potiguar	24481.706	4213.040	(2) AC-1200500-7CFD.C408.46DF.4C87.A738.D86D.0D15.2519 e AC-1200500-6077.1940.1B92.4127.A88A.019C.EEBE.C8ED	No
PAI #6	Faz. Lagoa Grande II	39610.519	7874.826	AM-1302702-491F2AA961E2472EAE1F173F2DAB1D27	No
PAI #7	Faz. Floresta Núbia	1395.339	233.563	PA-1503457-C6AEF45DCB934CA58917B2CA4AAAB29F PA-1503457-4232561FBB754D5EAFBF24B55C0AED59	No

PAI #8	Faz. Floresta I	2993.146	44.151	PA-1503457-A652D13A7E4648D8A55445C27992C4B7	No
PAI #9	Faz. Ribeiro Rondon	5061.293	808.485	PA-1506187-2BCED557F4D3421B964E7EBECE8D100E	No
PAI #10	Faz. D'graus I	4369.360	579.656	PA-1503457-E905B78A00A24EDBBC412671A7060502	No
PAI #11	Faz. D'graus II	4226.540	763.859	PA-1503457-101D20EAEB2342CE81C13564447B068E	No
PAI #12	Faz. D'graus VI	738.896	129.950	PA-1508001-DBFD721F95F1461B98CE7BE5F9B79906	No
PAI #13	Faz. Nova Esperança	1816.669	133.430	PA-1508001-2A8B26E4DBF742BE949CCA3E3BC7BEEF	No
PAI #14	Faz. São Domingos	2132.910	405.565	PA-1505502-3C55E3D459DC4631ACE3E2439CCC29F3	No
PAI #15	Faz. Capinzal I	8622.614	1111.061	PA-1502939-1655CEB9198A4B59A25F31473CB7D707	No
TOTAL		184638.99	30749.876		

In this monitoring period the Brazilian Amazon GPD six new farms were added, or Project Activity Instances, as it illustrated at figure below:

☒ KML file has been provided

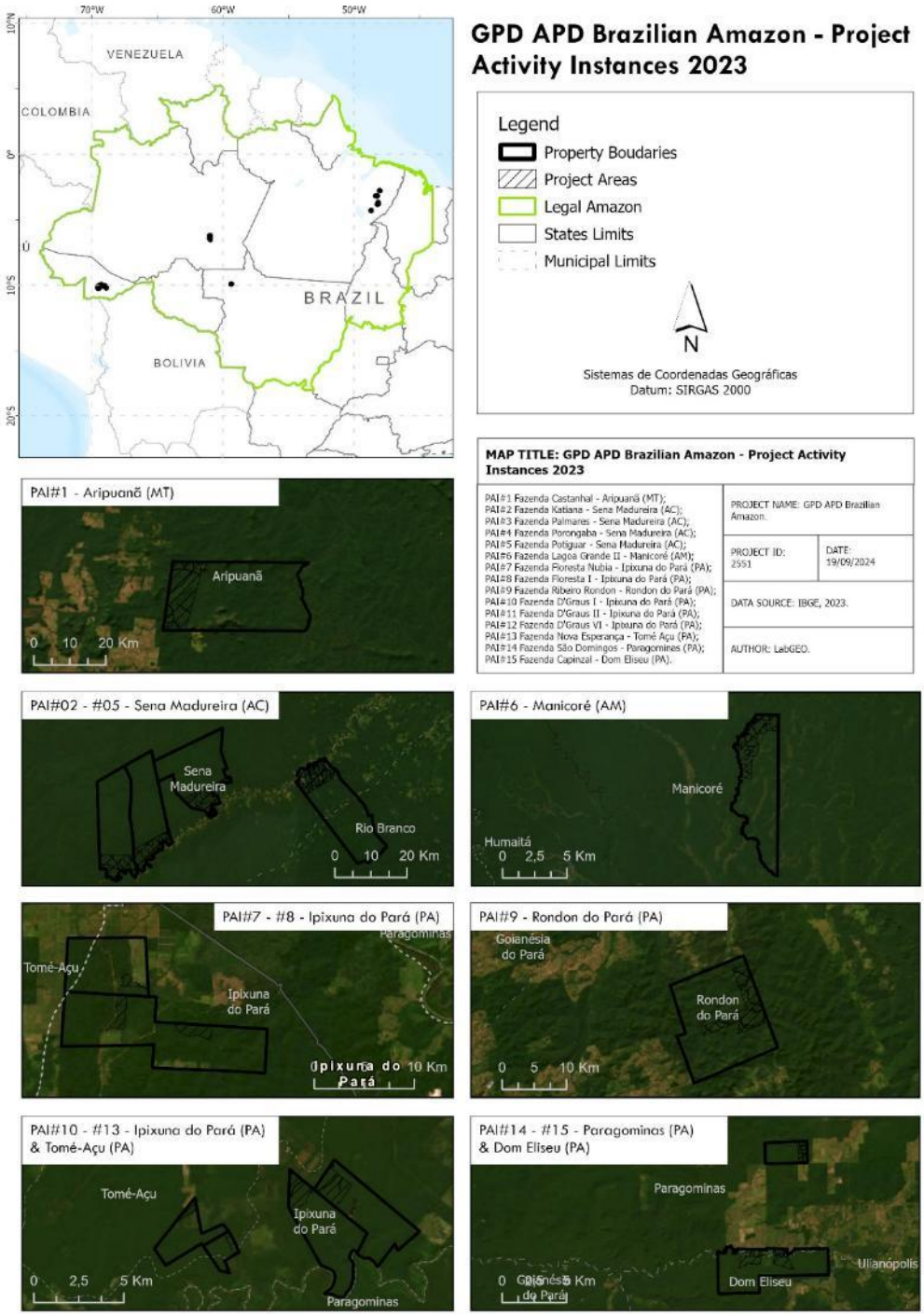


Figure 1. Project Location

2.1.9 Title and Reference of Methodology (VCS, 3.1)j

Table 15. Methodologies, tools and modules applied to the project.

Type (methodology, tool, module)	Reference ID (if applicable)	Title	Version
Methodology	**VM0007**	REDD+ Methodology Framework (REDD+ MF)	1.6
Module	**VMD0001**	Estimation of carbon stocks in the above-and below ground biomass in live tree and non-tree pools (CP-AB)	1.1
Module	**VMD0002**	Estimation of carbon stocks in the dead wood pool (CP-D)	1.0
Module	**VMD0003**	Estimation of carbon stocks in the litter pool (CP-L)	1.0
Module	**VMD0004**	Estimation of stocks in the soil organic carbon pool (CP-S)	1.0
Module	**VMD0005**	(CP-W) Estimation of carbon stocks in the long-term wood products pool	1.1
Module	**VMD0006**	Estimation of baseline carbon stock changes and greenhouse gas emissions from planned deforestation/forest degradation and planned wetland degradation (BL-PL)	1.3
Module	**VMD0009**	Estimation of emissions from activity shifting for avoiding planned deforestation/forest degradation and avoiding planned wetland degradation (LK-ASP)	1.3
Module	**VMD0013**	Estimation of greenhouse gas emissions from biomass and peat burning (E–BPB)	1.3
Module	**VMD0015**	Methods for monitoring of GHG Emissions and removals (M-MON)	2.1

Module	**VMD0016**	Methods for Stratification of the Project Area (X-STR)	1.2
Module	**VMD0017**	Estimation of Uncertainty for REDD+ Project Activities (X-UNC)	2.2
Tool	**VT0001**	Tool for the demonstration and assessment of additionality in VCS agriculture, forestry, and other land use (AFOLU) project activities (T-ADD)	3.0
Tool		AFOLU Non-Permanence Risk Tool	4.2

2.1.10 Double Counting and Participation under Other GHG Programs (VCS, 3.23; CCB, G5.9)

Currently, certain Brazilian states — including Pará, Acre, and Mato Grosso — are in the process of developing jurisdictional REDD+ programs under the ART/TREES framework. At the national level, Brazil is also undergoing a regulatory transition toward the implementation of a formal carbon market, including discussions on Article 6 of the Paris Agreement and domestic legislation.

Despite these developments, the current status of jurisdictional programs does not interfere with or impact the implementation of this project. The project is developed exclusively on privately owned lands, outside the jurisdictional control or allocation of emission reductions by the state. As such, there is no spatial or accounting overlap with any jurisdictional baseline or mitigation efforts, thereby ensuring the absence of double-counting risk.

To maintain alignment with emerging jurisdictional frameworks and uphold environmental integrity, the PP intends to transparently report all credit issuances to the appropriate national or subnational authorities, once a regulatory system is fully established and operational in Brazil.

This approach aligns with the requirements set forth in the VCS Standard v4.7 (Section 3.2.2), ensuring compatibility with nested REDD+ architecture and minimizing any potential risk of double claiming

2.1.10.1 No Double Issuance

Is the project receiving or seeking credit for reductions and removals from a project activity under another GHG program, or any other form of community, social, or biodiversity unit or credit?

☐ Yes ☒ No

2.1.10.2 Registration in Other GHG Programs

Is the project registered or seeking registration under any other GHG programs?

☐ Yes ☒ No

2.1.10.3 Projects Rejected by Other GHG Programs

Has the project been rejected by any other GHG programs?

☐ Yes ☒ No

2.1.11 Double Claiming, Other Forms of Credit, and Scope 3 Emissions (VCS, 3.24)

2.1.11.1 No Double Claiming with Emissions Trading Programs or Binding Emission Limits

Are project reductions and removals or project activities also included in an emissions trading program or binding emission limit? See the VCS Program Definitions for definitions of emissions trading program and binding emission limit.

☐ Yes ☒ No

2.1.11.2 No Double Claiming with Other Forms of Environmental Credit

Has the project activity sought, received, or is planning to receive credit from another GHG-related environmental credit system? See the VCS Program Definitions for definition of GHG-related environmental credit system.

☐ Yes ☒ No

2.1.11.3 Supply Chain (Scope 3) Emissions

Do the project activities affect the emissions footprint of any product(s) (goods or services) that are part of a supply chain?

☐ Yes ☒ No

If yes:

Is the project proponent(s) or authorized representative a buyer or seller of the product(s) (goods or services) that are part of a supply chain?

☐ Yes ☒ No

If yes:

Has the project proponent(s) or authorized representative posted a public statement on their website saying, “Carbon credits may be issued through Verified Carbon Standard project [project ID] for the greenhouse gas emission reductions or removals associated with [project proponent or authorized representative organization name(s)] [name of product(s) whose emissions footprint is changed by the project activities].”?

☐ Yes ☒ No

2.1.12 Sustainable Development Contributions (VCS, 3.17)

Table 16. Sustainable Development Contributions

Row number	SDG target	SDG indicator	Net impact on SDG indicator	Current project contributions	Contributions over project lifetime
1)	1.4	1.4.2 Proportion of total adult population with secure tenure rights to land, (a) with legally recognized documentation, and (b) who perceive their rights to land as secure, by sex and by type of tenure	Implemented activities to decrease poverty	28 families benefited by the started process of land donation	28 families benefited by the started process of land donation
2)	1.4	1.4.1 Proportion of population living in households with access to basic services	Implemented activities to increase	No actions were taken during this monitoring period; however, the Project Proponent is continuously reassessing the need for new actions in collaboration with the communities.	Donation to 18 families of a solar kits (energy, water pumps). Around 80 people with well being improved.

Row number	SDG target	SDG indicator	Net impact on SDG indicator	Current project contributions	Contributions over project lifetime
3)	1.4	1.4.2 Proportion of total adult population with secure tenure rights to land, with legally recognized documentation, and who perceive their rights to land as secure, by sex and by type of tenure	Implemented activities to increase	No actions were taken during this monitoring period; however, the Project Proponent is continuously reassessing the need for new actions in collaboration with the communities.	Mapping of 42 bona fide squatters' families interested to have their area regularized. Around 160 people with land rights ensured.
4)	3.7	3.7.1 Proportion of women of reproductive age who have their need for family planning satisfied with modern methods	Implemented activities to increase	No actions were taken during this monitoring period; however, the Project Proponent is continuously reassessing the need for new training sessions in collaboration with the communities' women.	Increase on female access to information throughout lectures about reproductive issues – One session of Pink October lecture. The lectures were held to around 20 women who was responsible to spread the information to others in one session of Pink October lecture
5)	3.8	3.8.1 Coverage of essential health services	Implemented activities to increase	No actions were taken during this monitoring period; however, the Project Proponent is continuously reassessing the need for new actions in collaboration with the communities.	More than 500 people attended by project support on public campaigns.

Row number	SDG target	SDG indicator	Net impact on SDG indicator	Current project contributions	Contributions over project lifetime
6)	4.4	4.4.1 Proportion of youth and adults with information and communications technology (ICT) skills, by type of skill	Implemented activities to increase	No actions were taken during this monitoring period; however, the Project Proponent is continuously reassessing the need for new actions in collaboration with the communities.	The project has installed 12 internet towers and more than 70 km of fiber optics cables, guaranteeing access to more than 70 families to the internet.
7)	4.6	4.6.1 Proportion of population in a given age group achieving at least a fixed level of proficiency in functional literacy and numeracy skills, by sex	Implemented activities to increase	No actions were taken during this monitoring period; however, the Project Proponent is continuously reassessing the need for new actions in collaboration with the communities.	Renovation and improvement of one school building and the donation of 01 TV's, 01 printer's and 01 computers, solar kits and water pumps
8)	4.a	4.a Proportion of schools offering basic services, by type of service	Implemented activities to increase		
9)	6.1.	6.1.1 Proportion of population using safely managed drinking water services	Implemented activities to increase	Maintenance of artesian well	175 people with improved access to quality water

Row number	SDG target	SDG indicator	Net impact on SDG indicator	Current project contributions	Contributions over project lifetime
10)	7	7.1 By 2030, ensure universal access to affordable, reliable, and modern energy services 7.2 By 2030, increase substantially the share of renewable energy in the global energy mix	Implemented activities to increase access to energy Implemented activities to increase access to renewable energy	23 solar kits donated	43 solar kits donated
11)	15	15.5 Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, 2030, protect and prevent the extinction of threatened species		Twenty-five species are classified as Vulnerable (VU), three species are classified as Endangered (EN), and two species are classified as Critically Endangered (CR), all found within the project area. The project aims the promotion of species conservation through the maintenance of forest habitats and avoidance of hunt pressure.	Twenty-five species are classified as Vulnerable (VU), three species are classified as Endangered (EN), and two species are classified as Critically Endangered (CR), all found within the project area. The project aims the promotion of species conservation through the maintenance of forest habitats and avoidance of hunt pressure.

Row number	SDG target	SDG indicator	Net impact on SDG indicator	Current project contributions	Contributions over project lifetime
12)	15.1	15.1.1 Forest area as a proportion of total land area	Implemented activities to increase	4,458.62 preserved	30,062.45 ha preserved
13)	15.2	15.2.1 Progress towards sustainable forest management	Implemented activities to increase	No actions were taken during this monitoring period; however, the Project Proponent is continuously reassessing the need for new actions in collaboration with the communities.	79 farm producers involved in lectures and practices

2.2 Project Implementation Status

2.2.1 Implementation Schedule (VCS, 3.2; CCB, G1.9)

The activities developed in PAIs #1-15 are presented in table below. Here we discriminated the "Implementation Schedule" of all PAIs under the scope of this project.

The activities described comprise the monitoring period for the year 2023, however it is important to highlight that some activities, related to carbon inventory, social engagement and biodiversity surveys, were carried out previously (in 2021 and 2022) and can be found in previous monitoring reports and in "APPENDIX_PAST-IMPLEMENTATION-SCHEDULE**"**. Activities are listed in chronological order and by type of activity (carbon measurement, biodiversity, and social and infrastructure).

Table 17. 3rd Monitoring Period Implementation Schedule

Date	Milestone(s) in the project's development and implementation
January 06th to 08th, 2023	(PAIs #2-5) Internet towers maintenance.
January 12th, 2023	(PAI #9) On-site meeting with the municipal education secretary (Mrs. Kelly Cristina) of Rondon do Pará and her team to discuss the works at the **P.A Bom Jesus** and the construction of **Irmã Dorothy's** school.
January 28th to February 05th, 2023	(PAIs #2-5) Social mobilization incursion.
February, 2023	(PAIs #7-15) BRC's staff team visit to inform the main project stakeholders about the verification process and to provide a copy of the Monitoring Report for the interested parties.
February 01st to 08th, 2023	(PAI #1) Informational meeting with stakeholders at Castanhal region and fixing signs of the Castanhal Project.
February 23rd to March 07th, 2023	(PAI #6) Informational meeting with stakeholders at Lagoa Grande region, public meetings with Curara community and fixing project signs.
February 24th to March 12nd, 2023	(PAIs #7-15) Fauna Survey on Fazenda Nubia Floresta, Fazenda Floresta I, Fazenda D'Graus I, Fazenda D'Graus II, Fazenda Dgraus VI, Fazenda Nova Esperança, Fazenda São Domingos, Fazenda Capinzal I and Fazenda Ribeiro Rondon

Date	Milestone(s) in the project's development and implementation
February 27th to March 15th, 2023	(PAIs #1-15) Public meetings to diffuse the Monitoring Report.
March 02nd to 11th, 2023	(PAIs #2-5) Public meeting for analysis, agreement, and renegotiation of project activities and to inform about the auditory.
March 02nd to 03td, 2023	(PAI #6) Meetings with representants of public institutions in Manicoré/AM
March 08th, 2023	(PAIs #7-15) Installation of signage boards boundaries of the REDD+ project.
March 2023	(PAIs #1-15) Site visit information to all stakeholders on verification.
April 19th, 2023	(PAIs #12-14) Indigenous peoples day celebration – Video recording – **TI Barreirinha**
April 20th to May 2nd, 2023	(PAI #1) Fauna Survey Campaign Fazenda Castanhal
April 2023	(PAIs #1-15) Auditing process.
May to August 2023	(PAI #4) Roadside maintenance
May 08th to 12th, 2023	(PAI #1) Informational meeting with stakeholders, including communities, and data collection at Castanhal region
May 16th, 2023	(PAIs #2-5) Meeting with public municipal (Sena Madureira) institutions – Municipal Health secretary
May 18th, 2023	(PAIs #2-5) Meeting with public state (Acre) institutions - State Educational Secretary
June 22nd to 27th, 2023	(PAI #6) Presentation of the biodiversity monitoring activity, dissemination of results and mapping of community demands at Curara
June 21st to July 4th, 2023	(PAI #6) Fauna Survey Fazenda Lagoa Grande
June 27th, 2023	(PAI #6) Installation of signage boards boundaries of the REDD+ project.
June 15th, 2023	(PAI #9) Start of school construction in **PA Irmã Dorothy** (settlement project).
July 28th, 2023	(PAI #4) Signing of the georeferencing contract for land donation
August 12th and 14th, 2023	(PAI #1) Participatory appraisal and planning with the São Lourenço and Serra Azul community at **Resex Guariba-Roosevelt**

Date	Milestone(s) in the project's development and implementation
August 09th to 11th, 2023	(PAI #1) Informational meetings with State Secretary of Environment at Cuiabá (MT) and Municipal Secretary of Social Assistance and Health at Aripuanã (MT)
August 15th, 2023	(PAI #2-5) Meeting with the Brazilian Agricultural Research Company – EMBRAPA at Rio Branco (AC)
August 23rd, 2023	(PAI #14) Presentation of the forest inventory activity **PA Águia** at Rio Bonito Municipal Elementary School**.**
September 21st, 2023	(PAI #15) Meeting with the team of Municipal Education Secretary of Rondon do Pará to deep the agreements about the schools of **P.A. Bom Jesus** and **P.A. Irmã Dorothy's**.
September 22nd, 2023	(PAIs #2-5) Meeting with Reference and Social Assistance Center – CRAS – Sena Madureira (AC)
September 25st, 2023	(PAI #4) Signing of the notary process contract for land donation
September 26th, 2023	(PAI #4) Signing of the contract for emission of Rural Property Registration Certificate for land donation
September 27th, 2023	(PAI #1) Strengthen local organization – Contract sign with Jurupará Socioambiental
September 28th, 2023	(PAI #1) Meeting with the Jurupará staff and representants of Association of Residents of the Guariba Roosevelt Agroextractivist Reserve -AMORARR and the local representant of the National Council of Extractvist Population - CNS
September to December 2023	(PAI #4) Donation of solar kits, freezers, water bombs, wires etc.
September to October 2023	(PAI #4) Religious building renovation
October 09th to 11th, 2023	(PAIs #2-5) Woman group meeting
October 12th, 2023	(PAI #4) Cultural, sportive, and religious celebration
November 21st and 27th, 2023	(PAI #6) Meeting with Special Indigenous Health Secretariat and National Foundation of Indigenous People
November 23rd to 24th, 2023	(PAI #1 and #6) Community exchange with **Resex Guariba-Roosevelt** communities at **Curara** about social organization and manioca flour value chain

Date	Milestone(s) in the project's development and implementation
December 04th, 2023	(PAI #9) Meeting with National Institute of Colonization and Agrarian Reform – INCRA – about construction's authorization of Bom Jesus school at **PA Bom Jesus**
December 04th, 2023	(PAI #1) Internship/trainee start of an AMORARR representant with Jurupará Socioambiental
December 22nd, 2023	(PAIs #12-14) Christmas celebration – activity with kids from **TI Barreirinha**
January 1st to December 31, 2023.	It was observed 35 events of deforestation in the PAIs #2 - #5, with a total area of 47.11 ha and a related emission of 22,878,13 t CO_2.

2.2.2 Baseline Reassessment (VCS, 3.2.6, 3.2.7)

Did the project undergo baseline reassessment during the monitoring period?

☐ Yes ☒ No

2.2.3 Methodology Deviations (VCS, 3.20)

According to the VCS v.4.7, section 3.20, projects may deviate from the procedures related to measurements or monitoring set out in methodologies where the proposed deviation leads to the same level of accuracy or is more conservative than what is set out in the methodology. The registered GPD has five methodology deviations so far. Three of them were made in the first monitoring period. One of them was made in the second monitoring period. These are already consolidated by previous project verification events. In the monitoring period covered by this verification, the project proponent has adopted an additional methodology deviation regarding $D\%_{planned}$ caluculation in areas where $AA_{planned}$ exceededs the legal threshold in the country.

1) CAB_non-tree,I,t-carbon stock in aboveground biomass in non-trees is considered as part of the average aboveground biomass stock subjected to burning (Bi,t) in VMD0013 v1.2, equation 2 in the baseline and project scenarios. The proposed methodology deviation relates to measurement and monitoring procedures and leads to more accurate estimates once this carbon pool is expected to be burned in the baseline scenario. For additional information see Appendix II (2551_MR3_CALCULUS_TABLE_INTEGRATED.xsls). This deviation was included during the first monitoring period and have been validated and verified in the same monitoring period.

2) An initial participatory rural appraisal (PRA) of the communities inside and surrounding the project area was performed to determine if there was the potential to occur illegal logging activity.

Considering GPD initial scope, it remained characterized that all families living inside the project area explore the forest for timber and fuel wood, what shall be considered as a low impact activity driven by subsistence purposes. No timber or fuel wood economic activity was identified by BRC field team. In this sense, BRC will assume that extraction of trees for timber or fuelwood is a constant in PAIs where there are communities inside. Rather than making a PRA every two years, BRC will monitor the forest degraded area annually considering the protocols established in this monitoring plan. This constitutes a methodology deviation which leads to more accurate and conservative estimates since significance of timber and fuel wood extraction GHG related emissions will always be tested. This deviation was included during the first monitoring period and have been validated and verified in the same monitoring period.

3) Monitoring period: The first monitoring period extends from August 2nd (project start date) to October 19th, 2021 (first monitoring report closing date). BRC proposes a methodology deviation related to the minimum duration of a monitoring period, to be applicable only in the first monitoring event.

Considering that this is a REDD+ APD project, GHG emissions in the baseline scenario would occur in the same period (from August to October) as the monitored period, that refers to the dry period in Amazonia, where logging and forest suppression is feasible, which is evidenced by the project start date (dry period in Amazonia), by operational and financial capacity of the landowner, through contracts signed with service providers for vegetation suppression and also through spatial analysis in other areas of the landowner property. The project GHG emissions, in turn, cannot be considered as underestimated as the project excludes all deforested areas within the properties, in the last 10 years, from the project area. In this way, the reduction of forest area affects the estimates negatively anyway. GHG emissions due to activity shifting leakage were considered as zero in the first year, because of the current project scope, which characterizes the absence of legally suppressible forest areas on other farms owned by the landowners. Finally, market effects leakage varies in function of the volume of timber projected to be extracted from the project boundary, during the baseline and would be the same for the first vintage, regardless of the length of the monitoring period (if 3 or 12 months).

Thus, with the proposed deviation, the project will achieve the same level of accuracy in GHG estimates. The deviation will not negatively impact the conservativeness of the quantification of GHG emission reductions. This deviation was included during the first monitoring period and have been validated and verified in the same monitoring period.

4) $D\%_{planned}$ parameter deviation: the $D\%_{planned}$ parameter defines the deforested area per property per year in accordance with VMD0006 module, section 5.1.3. It is stated: "Where a valid verifiable plan exists for rate at which deforestation is projected to occur, this rate must be used. If no verifiable plan exists, the rate must be established by examining proxy areas. Proxy areas may or may not be under the management of the project area's baseline agent of deforestation or class of deforestation agents. A minimum of 6 proxy areas must be included.". For inclusion of a proxy area related to the D%planned, the item 6 of the 5.1.3 section states that deforestation in the proxy area must have occurred within the 10 years prior to the baseline period. However, for the calculation of the parameter used in this project, one of the deforestation permits used to define the $D\%_{planned}$ was issued and executed in the first years of the project's baseline, which is 2022 and 2023. Although the execution of the ASV began in 2022, it extends into 2023.

Given that this document is officially authorized by government institutions and accurately reflects the reality of the project area, this authorization was considered eligible and plausible for use in the parameter calculation. Additionally, the authorization is valid and consistent with the reality in the Amazon, thus justifying its use in the context of this project. This deviation was included during the second monitoring period and have been validated and verified in the same monitoring period.

5) The project proponent adopted a methodological deviation related to parameter $D\%_{planned,i,t}$. According to methodology VMD0006, in situations where no verifiable deforestation plan exists, projected annual proportion of land that will be deforested in stratum i during year t must be established by examining proxy areas. The project proponent performed the calculation correctly, in accordance with the methodological requirements. However, when using $D\%_{planned,i,t}$. to calculate $AA_{planned,i,t}$ in large areas, a value that exceeds the legal limits in the country was found (see CONAMA Resolution No. 001/1986). Therefore, the project proponent applied a cap to $AA_{planned,i,t}$ that is lower than the limit imposed by the legal requirements and equal to the largest legally authorized and executed deforestation verified annually among the proxy areas considered for the D% calculation. Specifically, in the current monitoring period, the value of 910.11 ha was used as $AA_{planned,i,t}$ for PAI#06. The proposed methodological deviation will be applied systematically whenever $AA_{planned,i,t}$ exceeds 1,000 ha. The deviation led to more conservative estimates because the smaller $AA_{planned,i,t}$, the lower the project's annual VCU generation. This deviation is been included during the third monitoring period, and it is been validated and verified in the same monitoring period.

2.2.4 Minor Changes to Project Description (CCB Program Rules, 3.5.6)

Not applicable. No minor changes occurred in this monitoring period compared to the Project Description

2.2.5 Project Description Deviations (VCS, 3.21; CCB Program Rules, 3.5.7 – 3.5.10)

2.2.5.1 Allometric Equation

The aboveground carbon estimates were updated in this monitoring report using a new and more accurate allometric equation. This equation, developed by Chave et al. (2014), has gained widespread use in studies of forest biomass in Brazil and other tropical regions. It offers several advantages over the previous Nogueira et al. (2008) equation, including the incorporation of two additional parameters besides tree diameter: an environmental coefficient for estimating tree height and tree wood density. Furthermore, this equation is predominantly used in carbon stock estimates utilizing LiDAR remote sensing. While LiDAR has been applied in some Project Activity Instances (PAIs), enhancing the sampling and accuracy of carbon stock estimates, it has not yet been implemented across all PAIs due to logistical limitations. However, it is our goal to eventually employ LiDAR technology in all PAIs of the project to ensure the highest level of precision and reliability in our carbon stock assessments. Detailed information is available in Appendix IV ("Carbon Pool Measures"). Below, we list some reasons for transitioning from the Nogueira et al. (2008) equation to the Chave et al. (2014) equation:

- The equation has significant international relevance, evidenced by its presence in numerous scientific articles in the field of forest measurement, with over 2000 citations.

- It was developed using an extensive database from 58 sites across different physiognomies in the tropics, derived from 43 scientific studies (including same dataset from Nogueira et al. (2008)). This includes significant allometric information from forests in the Brazilian Amazon, where our project is located.

- Its pantropical nature allows for widespread use across various tropical physiognomies, enabling methodological standardization in voluntary carbon market projects.

- It is the primary allometric equation found in key scientific articles addressing forest monitoring and measurement using LiDAR technology (e.g., Longo et al. 2016, Duncanson et al. 2022, Asner et al. 2014, Baccini et al. 2017). See References in Appendix IV.

- It is the main peer-reviewed article used for above and below-ground tree biomass estimates in Brazil's Fourth National Communication - National Greenhouse Gas Emissions Inventory, specifically in the AFOLU sector report by the Ministry of Science and Technology.

- The equation includes a regional environmental factor that significantly influences the allometric relationship of trees, making it more site-specific.

- It incorporates a wood density factor, which is crucial in carbon calculation, adding another layer of site specificity.

- The equation is robust (r^2=0.9), sampling over 4,000 arboreal individuals, representing a significant and wide range (DBHs between 5 cm and 212 cm), especially, large samples in larger trees.

Although the equation adjustment doesn't impact in the applicability of the methodology, this also does not affect the additionality of the project, nor the baseline scenario adopted, since even though there is a subtle increase in the potential for VCU generation, due to the adoption of a more precisely allometric equation, this does not interfere with the baseline scenario adopted by the project, nor with the hypothetical conservation scenario, without carbon project activities. It is important to highlight that any change generated due to this deviation can only have an impact on the project activity scenario, which does not have any implications in the scope of additionality.

While the Nogueira equation is specifically tailored to the Brazilian Amazon, it is important to consider the broader representativeness and robustness of the Chave equation. Despite Nogueira's regional specificity, the Chave equation encompasses a larger and more diverse sample size, including a significant number of individuals from the Amazon region. This extensive dataset, covering a wide range of diameters from 5 cm to 212 cm, ensures a more comprehensive representation of tree sizes and types, particularly for larger trees which are critical in total carbon stock assessments. The Chave equation's broader scope, combined with its inclusion of additional environmental and density parameters, ultimately provides a more accurate and representative model for our project's diverse forest landscapes. This enhanced representativeness is further illustrated by the fact that, while the Nogueira equation includes about five individuals above 80 cm DBH, the Chave equation includes over 180 individuals, a third of which are from South America. By applying the Chave equation to these individuals in South America, larger than 80 cm, we obtained an R^2 = 0.66, whereas the Nogueira equation achieved an R^2 = 0.39. This highlights the limitations of the Nogueira equation in estimating carbon in individuals with large DBH, which are crucial for total stock assessments. Although the Chave estimates showed differences of less than 5% compared to the previously verified estimates in MR1 (PAIs #1-5), we opted to switch to the Chave equation due to all the evidence listed above. We believe that this change brings more standardization and accuracy to our long-term grouped project, especially in conjunction with the use of LiDAR technology. This decision aligns with PP commitment to employing the most reliable and up-to-date methods in our carbon stock assessments, ensuring that our carbon estimates are as precise and reliable as possible.

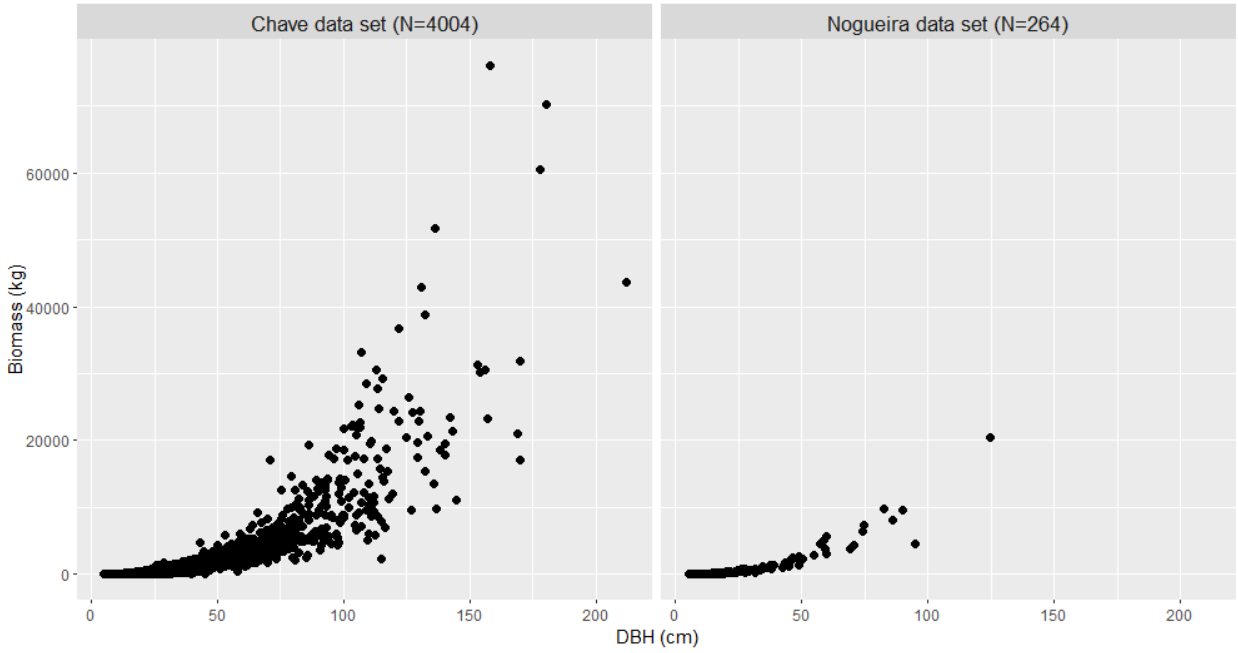


Figure 2. Chave and Nogueira equations in comparison of quantity of sample data - number of trees - applied in allometric models.

2.2.5.2 Biodiversity Gold Level

In the second monitoring report, a project description deviation was introduced regarding the project's inclusion in the Gold Level Criteria for Exceptional Biodiversity Benefits. At that time, the Gold Level designation was achieved by meeting the vulnerability criteria established in the Climate, Community & Biodiversity Standards: v3.1 (GL3.1.a). The biodiversity monitoring demonstrated that four species found within the project area are classified, by the IUCN Red List, as facing high risk of global extinction. These species trigger the vulnerability criteria and classify the project area as a Key Biodiversity Area (KBA) (Langhammer et al. 2007). One species is classified as Critically Endangered (CR): the bird *Psophia obscura*. Whereas three species are classified as Endangered (EN): the spider monkey *Ateles chamek*, the river dolphin *Inia geoffrensis* and the Giant Otter *Pteronura brasiliensis*. During the third monitoring period, an additional Endangered species, the capuchin monkey *Cebus kaapori*, was identified, further supporting the justification for maintaining the Gold Level designation.

For more information about the trigger species ecology and population trends please refer to section 5.4 of the present monitoring report. The complete information about the IUCN Red List assessment, species geographic range map, population trend, threats and ecological characteristics are available

in Appendix III - Biodiversity. The table shows the occurrence of each trigger species within the project instances.

Table 18. Endangered species found within the project area and their respective popular name, class, IUCN Red List classification and location of occurrence.

Species	Popular name	Class	IUCN Red List Status	Occurrence			
				PAI #1	PAIs #2-5	PAI #6	PAIs #7-15
Ateles chamek	Black-faced Black Spider Monkey (macaco-aranha-de-cara-preta)	Mammal	EN	x	x	x	
Inia geoffrensis	Amazon River Dolphin (boto-vermelho)	Mammal	EN			x	
Pteronura brasiliensis	Giant Otter (ariranha)	Mammal	EN			x	
Psophia obscura	Black-winged Trumpeter (jacamim-de-costas-escuras)	Bird	CR				x
Cebus kaapori	Ka'apor Capuchin (caiarara)	Mammal	CR				x

2.2.5.3 New Entity Inclusion

In this monitoring period there was a change in the implementation partner of PAIs #1-5, changing from BATISTA E CIA LTDA to Yaco2 Gestão e Comércio de Carbono. These two companies are both owned by the same owners. The owners use BATISTA E CIA LTDA company to manage his rural properties, and after noticing a high demand in the region for the carbon market, the owners established theYaco2 Gestão e Comércio de Carbono company to operate in the carbon market. The management of the company owner's business is his sole liberality.

Project 2551 is a grouped and scalable project. Therefore, it is natural that new owners of rural properties enter the scope of the project over time, with the inclusion of new PAIs.

During the expansion of the project and the introduction of new Project Activity Instances (PAIs), the project proponent has successfully identified potential new entities involved and stakeholders. These entities are poised to become integral partners as landowners, and/or actively participate in the implementation of project activities. In this sense, we have included in the second monitoring period the Incorporadora Manicoré LTDA company as implementation partner and landowner of PAI #6, Mr. Gilson Antônio Moreira Machado as the implementation partner and landowner of PAI #7 and #8, and Mr. Adão Ribeiro Soares as the implementation partner and landowner of PAI #9. In the third monitoring period we have included the FLORAPLAC Group as implementation partner and landowner of PAIs #10 to #15, represented by the companies Floraplac Industria LTDA and Rio Concrem Industrial LTDA, described on section 2.1.5 above.

2.2.5.4 New communities

The project initially started with four community groups (Porongaba, Palmares, Potiguar and Katiana communities), as outlined in the Project Description (PD). However, given the nature of a grouped project, it is expected that new communities will join as the project expands to additional instances.

No new communities were added during the first monitoring period. In the second monitoring period, nine new communities were incorporated. One of them—the **Curara Village**, located along the Mataurá River—is near PAI#6. The other eight are located near project instances PAI#7–9 in Pará and include: **Barreirinha Indigenous Land**; **Águia Settlement Project**; **Diamantina II Settlement Project**; **Bom Jesus Settlement Project**; **Irmã Dorothy Settlement Project**; **Concren II Settlement Project**; and the **Vila Brasil township**.

In the third monitoring period, one new community was added, the **Guariba-Roosevelt Extractive Reserve**, located in Aripuanã- MT.

2.2.5.5 New community impacts

All project activities are designed to meet the expected community impacts and align with the Theory of Change, as outlined in the Project Description (PD). However, since new communities can be added as the project expands its boundaries, it is expected that new and unforeseen activities may arise to address the specific needs of these communities. Each community has its own characteristics and faces different circumstances; therefore, project activities must be adapted accordingly.

In the PD, the expected community impacts included: digital inclusion, wildfire reduction, improved land management, education, health, water, training and employment and decrease the risk of invasions.

Now in the third monitoring period, due to the characteristic of the new communities and unpredicted situations, new impacts were added to the project, as described in section 4.1.1: empowerment of youth, support to local organizations, strengthening local culture, empowerment of women and support to structure of value chain.

2.2.6 Grouped Projects (VCS, 3.6; CCB, G1.13-G1.15, G4.1)

2.2.6.1 New Project Areas and Communities (VCS, 3.6; CCB, G1.13)

In addition to Project Activities Instances #1 to #9, six new PAI's and one community, – the Guariba-Roosevelt Extractive Reserve community,- were included, during this monitoring period. The table and figures below show the location of the project instances, as well as the start date of each instance, defined by the execution of long-term conservation agreements, which formally initiate the implementation of emission-reducing activities.

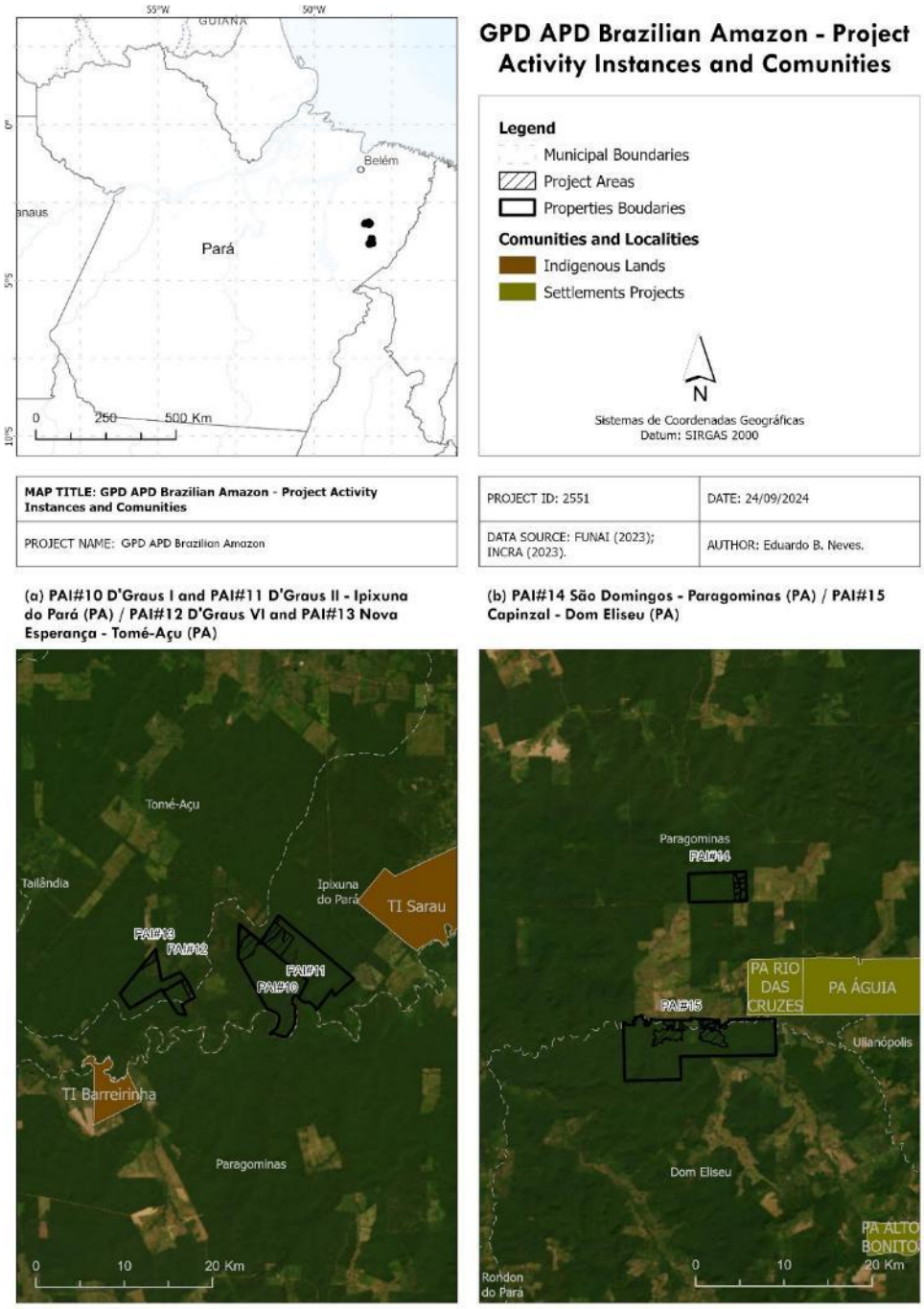


Figure 3. New project areas and mapped communities

Table 19. New project areas details

Instance	Property Name	Start Date (Signature of the contract)	Municipality/State
PAI #10	Fazenda D'Graus I	10/01/2023	Ipixúna do Pará/PA
PAI #11	Fazenda D'Graus II	10/01/2023	Ipixúna do Pará/PA
PAI #12	Fazenda D'Graus VI	10/01/2023	Tomé-Açu/PA
PAI #13	Fazenda Nova Esperança	10/01/2023	Tomé-Açu/PA
PAI #14	Fazenda São Domingos	101/01/2023	Paragominas/PA
PAI #15	Fazenda Capinzal I	10/01/2023	Dom Eliseu/PA

Despite the project being under development in Pará municipalities, there are no communities involved in this city, and will remain the same, once the BRC's social team are still searching for proper communities according to BRC's protocol that defines eligible communities for project activities (APPENDIX_ELIGIBILITY-COMMUNITIES-PROTOCOL). For this reason, this issue of involving communities is being solved through some definitions, following the protocol's guidelines, as shown below:

1. Within instances there are no present communities, nor there is any utilization of natural resources by the population in the surrounding areas.

2. Despite the fact that project areas are outside the geopolitical boundaries of these municipalities, some local characteristics show the non-need of working with communities inside their municipal borders. In the case of Ulianópolis (PA), Águia Settlement (where BRC has been working already), fulfils the function to represent the city, once the political, social, and economic relation of this settlement is directly related to this city, and not to Paragominas, where most of its territory is located (APPENDIX_ULIANOPOLIS-SOCIO-GEO-MAP).

3. To avoid conflict of interest with other projects proponents, in the case of Tomé-Açu, there are no communities being worked with because of the presence of carbon projects developed by other proponents. Further than that, Barreirinha Indigenous

Land was chosen to represent Tomé-Açu city because of the relation of its population with Tomé-Açu's political, social and economic services, making Barreirinha Indigenous Land a natural choose to cover the area.

In another region of the project, in Aripuanã-MT, where PAI #1 is located, a new partnership was initiated with the communities of the Guariba-Roosevelt Extractive Reserve (RESEX), mainly in the São Lourenço and Serra Azul communities, which are located in Banks of the Guariba River. Despite the distance from the project area, these communities are within the geopolitical limits of the city of Aripuanã, which means they are in the project zone and meet the community prioritization protocol requirements. Therefore, all the communities the project is working with follow the guidelines of the protocol, not only to define its partnership, but also to guarantee real impact in these communities and its territorial development.

Table 20. New communities' description.

Stakeholder	Rights, interest, and overall relevance to the project	Demonstrate how they meet the eligibility criteria (G1.14)	Demonstrate how their inclusion does not violate the scalability limits (G1.15)
Guariba-Roosevelt Extractive Reserve	There is no use of natural resources within the project area, nor do they hold rights over the carbon credits generated by the project's emissions reductions. However, as they are within the project's zone of influence, they will benefit from activities aimed at promoting local development.	The community meets the eligibility criteria by being subject to the same 'without-project' scenario, characterized by living in isolation without access to public policies, goods, or services. The community will participate in activities outlined in the PD, such as capacity building and employment opportunities. Additionally, the community has undergone the same stakeholder engagement processes, including socioeconomic surveys and participatory appraisals, and will be subject to the same monitoring elements specified in the PD	The continued inclusion of new PAIs has increased financial support and enabled the expansion of benefits to the Guariba-Roosevelt community without exceeding the thresholds beyond which there may be negative impacts on communities and/or biodiversity.

2.2.6.2 Removed Project Areas and Communities (CCB, G1.13)

During the development of the project, it became clear to the social team that working with the Canaã village wouldn't be productive, since it is a massive and highly urbanized space, counting around 5 thousand inhabitants. In a better sense, it was chosen to focus on smaller communities, given that the activities developed will be more effective.

The settlements of Rio das Cruzes and Paragonorte were also excluded, albeit for distinct reasons. At Paragonorte, the decision was influenced by the community's low interest in engaging with the project. In contrast, the removal of Rio das Cruzes was due to the absence of an organized community structure, complicating negotiations as it necessitates individual outreach. Furthermore, residents from Rio das Cruzes who displayed interest in project courses and activities have opted to participate through the nearby Rio Bonito community at Águia settlement.

2.2.6.3 Eligibility Criteria for Grouped Projects (VCS, 3.6.14; CCB, G1.14)

This project is designed as a Grouped Project, being limited by the Brazilian Legal Amazon borders. Therefore, the expansion of the project scope is allowed by the inclusion of new project activity instances (PAIs) after its validation. The inclusion of new PAIs takes place by the time of each verification event. A set of eligibility criteria for the inclusion of new PAIs are described below, following VCS v4.7 criteria (update section numbering 3.6.1 to 3.6.17).

According to the VCS v4.7, grouped projects shall meet the following criteria:

"3.5.8: Grouped projects shall have one or more clearly defined geographic areas within which project activity instances may be developed".

The GPD assumes only one wide geographic area known as the Brazilian Legal Amazon (5,364,100Km²). The project activity instances might encompass any private properties legally constituted, with forest cover surplus considering the thresholds established by the federal law. In other words, the GPD can include any private properties with more than 80% of forest cover in Amazon biome or 35% in Cerrado biome, that in a baseline scenario would be legally suppressed in up to 20% or 65% of the native vegetation for economic purpose, respectively. The GPD considers all forest types as per Brazilian forest definition, including three categories of Cerrado (Savana Florestada, Savana Parque and Savana Arborizada). This geographic area spreads through the states of Acre, Amapá, Amazonas, Pará, Roraima, Mato Grosso, Rondônia, Tocantins and part of the territory of Maranhão. The PAIs included in this monitoring period are located in Pará state and

have forest cover surplus considering the thresholds established by the federal law, being eligible for REDD+ project.

“3.5.9: Determination of baseline scenario and demonstration of additionality are based upon the initial project activity instances. The initial project activity instances are those that are included in the project description at validation and shall include all project activity instances currently implemented on the issue date of the project description”.

Regarding baseline and additionality, it is assumed that all private properties in this geographic area are subject to the same legal framework and similar deforestation agents and drivers as those identified for PAIs #1-5, the initial project activity instances. All landowners within the Legal Amazon have the right to convert up to 20% of the forest area (or 65% of the Cerrado) in their private properties for economic purposes. In this context business-as-usual is livestock, sometimes followed by soybean, cotton or corn production. PAIs #10 to #15, which were included in this monitoring period, are subjected to the same legal framework and similar deforestation agents and drivers as those identified before. That is, they are under the same legislation, the Brazilian Forest Code, which allows the landowners to legally deforest the land partially and also under the same opportunity costs related to cattle ranching and grains production, as it is common in the Brazilian Amazon.

“3.5.10: As with non-grouped projects, grouped projects may incorporate multiple project activities. Where a grouped project includes multiple project activities, the project description shall designate which project activities may occur in each geographic area”.

The only project activity considered in the project scope for which carbon credits generation is attributable and that is related to the methodology adopted in the project design in all project activity instances is avoiding planned deforestation, as well as the new PAIs included in this monitoring period.

To avoid planned deforestation BRC has signed a long-term conservation agreements with all landowners, including for new PAIs included in this monitoring period. Complementary activities related to leakage mitigation, social and biodiversity related activities and monitoring activities are described in sections 3.2.3, 4 and 5.

“3.5.11: The baseline scenario for a project activity shall be determined for each designated geographic area, in accordance with the methodology applied to the project”.

Only one wide geographic area is considered for this grouped project, once the baseline scenario for avoided planned deforestation activity in Legal Amazon is the same and all private properties are subjected to the same regulatory framework. Please refer to sections 3.4.

“3.5.12: The additionality of the initial project activity instances shall be demonstrated for each designated geographic area, in accordance with the methodology applied to the project.”

Only one broad geographic area is considered for this grouped project, once the additionality approach for avoided planned deforestation activity in the Legal Amazon is the same. . All private properties are subject to the same regulatory framework, which allows landowners in the Legal Amazon to convert up to 20% of forested areas on their private lands for economic purposes. In this context, the business-as-usual scenario is livestock production, sometimes followed by soybean, cotton, or corn cultivation, which is also observed for the new PAIs included in this monitoring period.

“3.5.13: Where factors relevant to the determination of the baseline scenario or demonstration of additionality require assessment across a given area, the area shall be, at a minimum, the grouped project geographic area. Examples of such factors include, inter alia, common practice; laws, statutes, regulatory frameworks or policies relevant to demonstration of regulatory surplus; determination of regional grid emission factors; and historical deforestation and degradation rates”.

The relevant factors for the baseline scenario determination and demonstration of additionality of a given project activity instance are the same for the entire geographic area. Any legally constituted private properties within Amazon biome, with more than 80% of forest cover (or 35% for Cerrado) is eligible for this grouped project, and all the new PAIs included in this monitoring period respects this criteria.

“3.5.14: Where a capacity limit applies to a project activity included in the project, no project activity instance shall exceed such limit. Further, no single cluster of project activity instances shall exceed the capacity limit”.

Not applicable. There is no capacity limit applicable to the project activity type (APD) considered in the grouped project.

"3.5.15: Grouped projects shall include one or more sets of eligibility criteria for the inclusion of new project activity instances. At least one set of eligibility criteria for the inclusion of new project activity instances shall be provided for each combination of project activity and geographic area specified in the project description. A set of eligibility criteria shall ensure that new project activity instances”:

1) Meet the applicability conditions set out in the methodology applied to the project:

a) All PAIs under the GPD must meet the applicability conditions set out in the methodology VM0007 v1.6. Regarding PAIs #1-15, the applicability conditions are met as demonstrated:

- The PAIs included in this monitoring period have no areas registered under the CDM or under any other GHG program.
- All lands included in the project scope are qualified as native primary forest, according to the Brazilian forest definition.
- Baseline deforestation and forest degradation in the project area fall within the category “Planned deforestation/degradation”.
- Leakage avoidance activities in the new PAIs included in this monitoring period do not include agricultural lands that are flooded to increase production, neither livestock production through use of feed-lots and/or manure lagoons.
- The baseline scenario for all the PAIs applied under this GPD are based in the legal conversion of forest lands to non-forest lands, according to the applicable law.

2) Use the technologies or measures specified in the Project Description report: sections 1.11 and 5.3 define the technologies and measures available. The GHG emissions reductions will be caused by the signing of long-term forest conservation agreements with landowners in all PAIs. Complementary activities related to leakage mitigation, social and biodiversity related activities and monitoring activities are also described in section 1.11 and 5.3 of the Project Description report, and in the sections 3, 4 and 5 of this Monitoring Report.

3) Apply the technologies or measures in the same manner as specified in the project description: thenew PAIs included in this Monitoring Period applies the same technologies or measures specified in the Project Description. Small adjustments area allowed to accommodate new PAI specificities in the future. Any adjustment will be reported, described, and must not overestimate the project climate.

4) Are subject to the baseline scenario determined in the project description for the specified project activity and geographic area: the grouped project assumes the Legal Amazon as a unique wide geographic area, taking into consideration that all private properties within this biome are subject to the same legal framework. The new PAIs included in this monitoring period follows the same baseline

approach described in the section 3.4 of the Project Description and are aligned with all the requirements.

5) Have characteristics with respect to additionality that are consistent with the initial instances for the specified project activity and geographic area: considering that the grouped project refers to avoidance planned deforestation (APD) in areas where the forest suppression is permitted by law, all the subsequent new project activity instances submitted under this GPD, must follow the same additionality approach presented in section 3.5 of the PD for PAIs #1-5. It means that the plausible baseline scenarios will not differ from the three scenarios identified in the additionality analysis, as follow:

a. Forest cover maintenance of 20% of the property in Amazon biome and 65% in Cerrado, where the land use conversion is allowed by law, i.e.: through conservation activities resulting from incentives other than the REDD APD project.

b. Legal deforestation of 20% of the property in Amazon biome and 65% in Cerrado, (deforestation with permits), where the land use conversion is allowed by law for i.e.: pasture (cattle raising) and agriculture.

c. Illegal deforestation of 20% of the property in Amazon biome and 65% in Cerrado, (deforestation without permits), where the land use conversion is allowed by law, for pasture (cattle raising) and agriculture purposes or simply for real estate speculation.

“3.5.16: “Grouped projects provide for the inclusion of new project activity instances after the initial validation of the project. New project activity instances shall:”

1) Occur within one of the designated geographic areas specified in the project description: the GPD has assumed only one wide geographic area, where PAIs can occur. This geographic area encompasses all the private properties legally constituted in the Amazon biome, with surplus of forest cover, as per the federal law 12.651, from May 2012. All new PAIs included in this monitoring period respects this requirement, and are located in the Brazilian Legal Amazon.

2) Comply with at least one complete set of eligibility criteria for the inclusion of new project activity instances: the set of eligibility criteria for the inclusion of a new project activity instances, is the following:

a. Regularized rural properties within the Legal Amazon with forest coverage greater than 80% in Amazon biome and 35% in Cerrado - new PAIs included in this monitoring period are all private properties located at Brazilian Legal Amazon and are regularized;

b. A landowner must have signed a long-term forest conservation agreement with the BRC - all new PAIs included in this monitoring period have a signed long-term forest conservation agreement between the landowner and the project proponent;

c. New PAIs, must have a valid vegetation suppression license approved by the state environmental agency, or at least a submission protocol to this agency (as required by the VMD0006 v1.3), to obtain the deforestation permits, according to the federal law 12,651 - all new PAIs included in this monitoring period have at least a submission protocol for vegetation suppression to the state environmental agencies.

3) Be included in the monitoring report with sufficient technical, financial, geographic, and other relevant information to demonstrate compliance with the applicable set of eligibility criteria and enable sampling by the validation/verification body: this document was prepared based on the Monitoring Report VCS and CCB template and covers PAIs #1-15. New project activity instances will be included in the project scope in new monitoring reports. Technical, financial, and geographic information related to demonstration of compliance with the set of eligibility criteria here defined will be present in section 2.2.6 of the next monitoring reports.

4) Be validated at the time of verification against the applicable set of eligibility criteria: each new project activity instance included in the grouped project, must be validated against the applicable set of eligibility criteria, stated in the item 2 above, by the time of the grouped project verification. All new PAIs included in this monitoring period are being validated against the same eligibility criteria.

5) Have evidence of project ownership, in respect of each project activity instance, held by the project proponent from the respective start date of each project activity instance: evidence of project ownership is defined as the second eligibility criteria, as mentioned in item 2 above.

6) Have a start date that is the same as or later than the grouped project start date: according to the VCS start date definition, the start date of each activity instance will be the date of the protection plan implementation commencement which, in its turn, according to VMD0006 v1.2, is dependent on the issuance (or issuance request) of a legal permit for deforestation to the relevant government department. At this moment, the protection plan, represented by the project area long-term conservation agreement, is being implemented for PAIs # 1-15. In this sense, it is characterized that the start date of the new project activity instances is later than or equal to the start date of the grouped

project. – Since the long-term conservation agreement for the new instances have been signed previous to the start of this monitoring period, we have considered their start date as the the first day of this MP (01/jan/2023).

7) Be eligible for crediting from the start date of the instance through to the end of the project crediting period: the crediting period of the new PAIs included in this Monitoring Period is defined according to the specific PAI baseline, which in its turn, will be determined in function of the area potentially deforested and the rate of planned deforestation, following VMD0006 v1.2 criteria.

8) Use $D\%_{planned,i,t}$ according to methodology deviation 5 in situations where AAplanned,i,t exceeds the legal requirements in the country (see see CONAMA Resolution No. 001/1986).

All new instances occur in the Legal Amazon, at designated geographic area specified in the project description. The new instances are at Pará State, and have the same characteristics with respect to additionality, that are consistent with the initial instances (Legal deforestation of 20% of the property in Amazon biome with deforestation permits), where the land use conversion is allowed by law, to activities as common practices as pasture (cattle raising) and agriculture.

In compliance with VCS Standard v4.7, Section 3.6.16(1), and the eligibility conditions under VMD0006 v1.3, Part 1, Section 1.2, all landowners associated with the new PAIs presented documented Forest Suppression Authorizations *(Autorizações de Supressão Vegetal* – ASVs), or at minimum, official ASV protocol submissions to the respective state environmental agencies. These documents were submitted before any formal engagement or contractual negotiation under the REDD+ initiative. As such, the ASVs serve as dated legal evidence of prior deforestation intent and support the planned deforestation baseline scenario applicable under the VMD0006 methodology. Refer to ANNEX_BASELINE-SCENARIO.

Table 21 - Dates of intent to deforest authorization

PAI	Identified deforestation agent (Landowner)	Date of Conservation Agreement Signed	Deforestation intent	Dates of intent to deforest authorization
#01	Yaco2 Gestão e Comércio de Carbono. Implementation partner and landowner of PAIs #1-5.	02-August-2021	Deforestation permit requested	10/12/2018

PAI	Identified deforestation agent (Landowner)	Date of Conservation Agreement Signed	Deforestation intent	Dates of intent to deforest authorization
#02	Yaco2 Gestão e Comércio de Carbono. Implementation partner and landowner of PAIs #1-5.	02-August-2021	Deforestation Permit approved	15-April-2021
#03	Yaco2 Gestão e Comércio de Carbono. Implementation partner and landowner of PAIs #1-5.	02-August-2021	Deforestation permit requested	15-July-2021
#04	Yaco2 Gestão e Comércio de Carbono. Implementation partner and landowner of PAIs #1-5.	02-August-2021	Deforestation permit requested	15-July-2021
#05	Yaco2 Gestão e Comércio de Carbono. Implementation partner and landowner of PAIs #1-5.	02-August-2021	Deforestation permit requested	17-July-2021
#06	Incorporadora Manicoré LTDA Implementation partner and landowner of PAI #6.	05-August-2022	Deforestation permit requested / Documented history	08-October-2021
#07	Mr. Gilson Antônio Moreira Machado Implementation partner and landowner of PAIs #7-8.	07-June-2022	Deforestation permit requested	10-March-2022
#08	Mr. Gilson Antônio Moreira Machado Implementation partner and landowner of PAIs #7-8.	07-June-2022	Deforestation permit requested	10-March-2022
#09	Mr. Adão Ribeiro Soares. Implementation partner and landowner of PAI #15.	28-September-2022	Deforestation permit requested	18-August-2020

#10	Floraplac Group (Floraplac Industria LTDA and Rio Concrem Industrial LTDA). PAI's #09 to #14 landowner.	10-January-2023	Documented history / Deforestation permit requested	30-January-2021
#11	Floraplac Group (Floraplac Industria LTDA and Rio Concrem Industrial LTDA). PAI's #09 to #14 landowner.	10-January-2023	Documented history / Deforestation permit requested	30-January-2021
#12	Floraplac Group (Floraplac Industria LTDA and Rio Concrem Industrial LTDA). PAI's #09 to #14 landowner.	10-January-2023	Documented history / Deforestation permit requested	30-January-2021
#13	Floraplac Group (Floraplac Industria LTDA and Rio Concrem Industrial LTDA). PAI's #09 to #14 landowner.	10-January-2023	Documented history / Deforestation permit requested	30-January-2021
#14	Floraplac Group (Floraplac Industria LTDA and Rio Concrem Industrial LTDA). PAI's #09 to #14 landowner.	10-January-2023	Documented history / Deforestation permit requested	30-January-2021
#15	Floraplac Group (Floraplac Industria LTDA and Rio Concrem Industrial LTDA). PAI's #09 to #14 landowner.	10-January-2023	Documented history/ Deforestation permit requested	30-January-2021

8)

The only project activity considered in the scope of the grouped project, for which carbon credits generation is attributable, in line with the methodology adopted and applicable to all instances, is avoiding planned deforestation.

To avoid planned deforestation BRC signs long-term conservation agreements with landowners and demonstrate compliance with the applicable set of eligibility criteria. the relevant and additional information can be seen attached to this report (APPENDIX_LEGAL-AGREEMENTS; APPENDIX_GIS-DATA; and ANNEX_LAND-TENURE).

Complementary activities related to the reduction of planned deforestation, leakage mitigation, social and biodiversity related activities and monitoring activities are described in section 2.1, 4 and 5 of this report, and it is also presented in sections 1.11 and 5.3. of the project description.

2.2.6.4 Risk Mitigation for Grouped Projects (VCS, 3.6; CCB, G1.15)

Not applicable. The project cannot be expanded beyond its scalability limit. The climate, community and biodiversity benefits risk mitigation measures identified in this document are applicable to all PAIs.

2.2.6.5 Project Zone Map (CCB, G1.13)

For the Project Zone Map for all PAIs, please refer to section 2.1.8 - Project Location, above. There are described the location of communities that are present to the project scope at this verification, besides the boundaries of the project areas that are present to this verification.

2.2.6.6 Changes to Management (CCB, G4.1)

There were no changes in the management structure, roles, or responsibilities in the grouped project due to the inclusion of new instances or new stakeholders. BRCs organization remains the same as per section 2.4.1. of the Brazilian Amazon GPD CCB Project Description

2.2.7 Risks to the Project (CCB, G1.10)

Table 22. Project Risks

Identified Risk	Potential impact of risk on climate, community and/or biodiversity benefits	Actions needed and designed to mitigate the risk
Unavoidable unplanned deforestation (Human-induced)	PAIs #2-5: The traditional communities residing in the project area (PAIs #2-5) promote deforestation to expand pastures or new plantations. This is most often a reduced magnitude and low impact activities, however, over time, such activities can harm the expected benefits to the climate. PAI #6: Although there are no communities living within the project areas (PAI #6), there are people who exploit non-timber products, which can be vectors of degradation.	PAIs #2–5: During the current monitoring period, BRC is promoting land donation and developing a payment for environmental services scheme for community members who have not engaged in deforestation. PAI #6: During activities conducted in November 2023, BRC worked together with extractives to raise awareness about the carbon project, forest conservation and the eventual valorization of exploited non-timber products.

Identified Risk	Potential impact of risk on climate, community and/or biodiversity benefits	Actions needed and designed to mitigate the risk
Political (Human-induced)	PAIs #1-15: Specific groups of stakeholders can mobilize against carrying out project activities following their own agendas, which can compromise the project's benefits to communities.	BRC works with a specific social engagement protocol (APPENDIX_SOCIAL-ENGAGEMENT-PROTOCOL), which comprises a stage aimed at obtaining free, prior, and informed consent and the creation of mechanisms for continuous communication, associated with a grievance and redress procedure. During this monitoring period, the PP has continued this process.
Predatory hunting and overfishing (Human-induced)	PAIs #2-5: Hunting and fishing are cultural and fundamental aspects of the livelihoods of the traditional communities residing in the project area (PAIs #2-5). These activities are assumed as traditional and of low impacts. On the other hand, these activities are carried out in a disorganized manner, without any kind of monitoring or control, which can harm the project's biodiversity objectives.	Fauna monitoring and activities of environmental education
Extreme droughts (Natural)	PAIs#1-15: Climatic anomalies such as El-Nino could change the air currents over the Amazon biome, making the forest drier and more flammable, which could compromise the project's climate and biodiversity objectives.	BRC is increasing the budget and intensity of activities related to forest fire prevention and wildfire combat in El-niño years. During this monitoring report, the PP has conducted some conversations with the community member surrounding the project area, in order to increase the fire prevention.

Identified Risk	Potential impact of risk on climate, community and/or biodiversity benefits	Actions needed and designed to mitigate the risk
Wildfires (Human-induced)	PAIs #2-5: The presence of traditional communities residing in the project area (PAIs #2-5) raise the risk of fire The traditional communities use fire as an instrument for landscape management. This fire can strike the forest, especially in drier years, and undermine the project's climate benefits.	BRC works with wildfire prevention and combating wildfires. These actions include training and qualifications, training of volunteer fire brigades, purchasing equipment to fight forest fires and continuous fire monitoring from satellite images. In the current monitoring period, the PP conducted fire monitoring through satellite images and ongoing awareness activities with the communities.

2.2.8 Benefit Permanence (CCB, G1.11)

For all project activity instances, already verified or under verification process, BRC took legal steps to ensure that the climate, community, and biodiversity benefits will be maintained beyond the project lifetime. Each PAI has a legal agreement (APPENDIX_LEGAL-AGREEMENTS) that was signed with the landowner to continue the management practices that will lead to the project area conservation for at least 30 years in the initial instances, and 40 years to the new instances according the standards new rules, and guarantee the permanence of the carbon stocks in the post project scenario and, as well, the community and biodiversity benefits:

Landowner responsibilities

“(ii) Ensure, through legal instruments for conservation (Environmental Servitude, Private Natural Heritage Reserve - RPPN's, among others), the maintenance of areas and the legal protection necessary to ensure the permanence of carbon stocks in the post-project scenario. In other words, to maintain the integrity of the area object of the Carbon Credit Project, where no land use change of the rural property is allowed”.

The GPD GHG accounting period is 100 years. Any PAI lifetime can be extended until the year 2121.

Beyond the legal steps to be taken to guarantee long-term benefits, there are other strategies developed by the BRC team to assure its gains. And it is related to internal protocols which sees – pedagogic activities, partnership with stakeholders, as state institutions, NGO's and others, constant presence and supporting to the territory and its inhabitants, supporting especially the needs of education, and other strategies –, as fundamental tools to make the project been effective for a long term.

According to VCS Standard version 4.7, section 3.9.3, about Project Crediting Period Length: "For all AFOLU projects other than such ALM projects described in 3.9.2, the initial project crediting period shall be a minimum of 20 years up to a maximum of 100 years, which may be renewed at most four times, with a total project crediting period not to exceed 100 years"

The project ID2551 is grouped and scalable in nature and that it is a mere liberality of the project proponent, following the requirements of the VCS standard, to define the longevity of the project at 100 years and to include new PAIs throughout the project lifetime. Besides that, the contract signed with the landowner, which suggests a minimum conservation period of 40 years, all legal agreements also include a specific clause guaranteeing the permanence of carbon stocks in the post-project scenario, as well as community and biodiversity benefits.

Clause 2 of the legal agreements establishes:

"The duration of the project is 100 (one hundred) years, starting from "Project Start Date." The period for the generation of VCU's Carbon Credits (VCUs) is 40 (forty) years, starting from the signing of this contract.

In order for the carbon credits generated by the property(ies) subject to this contract within the carbon project to be maintained, it is necessary to renew this contract during the duration of the project. If the landowner is not interested in proceeding with the contractual renewal, this must be communicated at least 24 months in advance."

In case the landowner decides not to renew the contract, clause 4.2 of the legal agreements establishes, among the responsibilities of the landowner: *"(ii) Ensure, through legal instruments for conservation (Environmental Servitude, Private Natural Heritage Reserve - RPPNs, among others), the maintenance of areas and the legal protection necessary to ensure the permanence of carbon stocks in the post-project scenario. In other words, to maintain the integrity of the area subject to the Carbon Credit Project, where no land use change of the rural property is allowed."*

Therefore, we are committed to implementing measures that ensure effective conservation and protection of carbon stocks throughout the entire project life, which is 100 years.

To make the development of the project possible it is necessary constant consent, which means contact, transparency, agreement, information, and mutual belief, in this sense it helps the project to go well in the long term.

2.3 Stakeholder Engagement & Safeguards

Currently the BRC's stakeholder engagement protocol is based on interaction conducted in four distinct phases, as described below.

The first phase involved socioeconomic and cultural surveys and diagnoses. In this phase, BRC team shared with the communities and other stakeholders a project design that included general and specific types of activities that could be developed under the project to support discussions among community representatives and prepare for the second round of interaction. BRC team also discussed with the communities the potential benefits, costs, and risks of the project. This phase is fundamental to map and identifying the local stakeholders, mainly the people who live in the impacted area by project. In this sense, all the information is collected and displayed to our team, including evidence about the existence of any person who can be directly affected by the project.

The second phase took the form of participatory workshops to design the project activities and focused on building and obtaining the free, prior, and informed consent of the communities affected by the project. In these workshops, BRC defined the project's social activities, monitoring parameters, and mechanisms for participation and benefit sharing. BRC also considered potential negative impacts and possible mitigation measures, and established mechanisms for ongoing communication and grievance procedures. In these workshops, BRC team tried to map HCVs, and to involve and interact with the community women, looking for organize groups of women, what is been developed in some territories.

In the third phase, social monitoring was conducted based on the previously established monitoring plan.

In the fourth phase, PP established the dissemination of monitoring results, the procedure for participating in the VCS/CCB public comment period, the project validation/verification process, and the role of the auditor.

2.3.1 Stakeholder Identification (VCS, 3.18, 3.19; CCB, G1.5)

A new community was identified and added to the project, as described in section 2.2.6.1. The community Guariba-Roosevelt is located in the geopolitical limits of Aripuanã municipality, where the PAI#1 is located. The identification followed the stakeholder identification process and the community's prioritization protocol described in the PD and available in "APPENDIX_ELIGIBILITY-COMMUNITIES-PROTOCOL",

2.3.2 Stakeholder Access to Project Documents (VCS, 3.18, 3.19; CCB, G3.1)

All project documentation, including the project description and monitoring reports, are available through the BRC and Verra websites, social media, and during public meetings. The printed version distributed to communities and stakeholders included a general description of physical and social parameters and other relevant aspects during the project lifetime. Beyond that, BRC compromises itself to keep a constant open channel of contact with all the stakeholders and to maintain through campaigns, public reunions, protocols, cell phone and other tools all involved institutions, communities and community members informed and aware about the publication of these documents. Evidence regarding access to project documents, as well as informative meetings can be accessed in "APPENDIX_EVIDENCE".

2.3.3 Dissemination of Summary Project Documents (VCS, 3.18, 3.19; CCB, G3.1)

A printed version of the CCB GPD summary in Portuguese was distributed, especially during public meetings with the communities, and through institutional meetings with public sector and with other stakeholders. But it is distributed as well in minor reunions with some actors and through the quotidian contact of BRC team and stakeholders. The PP recommends to all stakeholders to maintain the printed version on public places to be seen by all interested people. And further than just summary distribution, the BRC team talk about what is inside the documentation using an adaptative language for each kind of public.

2.3.4 Informational Meetings with Stakeholders (VCS, 3.18, 3.19; CCB, G3.1)

The BRC team has been visiting the territory and the interested parties during the whole project period, has promoted public meetings in most of the places which has project development and in the project areas on an annual basis (when possible) to disseminate the results and assess the costs, risks and benefits of the project.

All the activities in the site are informed to the beneficiaries using multiples means to it, since WhatsApp contacts, till communication via radio (where it is the better way to do), passing through social medias and official invites.

During the 2023 period happened some informal activities on the site, and they are described below:

On-site meeting with Rondon do Pará's municipal education secretary (Mrs. Kelly Cristina).

January 28th to February 05th / 2023: during this week the BRC team walked around the PAI #2-5 mobilizing and informing the population about public meetings which occurred a few weeks later.

February 01st / 2023: On-site meeting with local socio-environmental company – Jurupará Socioambiental in Aripuanã-MT (PAI #1).

February 01st, 2023: Meeting with manager Anna Magdalena Guedes de Azevedo Cruz and Agro Business Manager Mario Marquezan Junior – SICREDI Bank in Aripuanã-MT (PAI #1).

February 02nd / 2023: Meeting with some councilors at municipal Council Chamber in Aripuanã-MT (PAI #1).

February 02nd / 2023: Meeting with the mayor (Seluir Peixer) at city hall in Aripuanã-MT, The Municipal Secretary of the Environment, Claudete Thomas was present (PAI #1).

February 03rd / 2023: Presentation of the project to the Association of Small Rural Producers of Gleba Cafezal Géssica Ferreira Terres and Sabrina Rezende, president and vice president, respectively – Aripuana-MT (PAI #1).

February 02nd to 11th / 2023: Public meeting for agreements and definitions of project activities with Porongaba, Palmares, Potiguar e Katianã communities (PAIs #2-5).

February 04th / 2023: Meeting with the secretary of Municipal Secretary of Rural Development - SEMDER – Mister Heiji da Silva Kawatake (PAI #1).

February 25th /2023: Public meeting to presentation the project with Curara community – Manicoré – AM (PAI #6).

March 02nd / 2023: Meeting with the secretary of Municipal Secretary of Environmental and Sustainable Development – Manicoré – AM – Mister Paulo Renato da Silva Vieira (PAI #6).

March 02nd / 2023: Meeting with the representant Institute for Sustainable Agricultural and Forestry Development of the State of Amazonas - IDAM – Manicoré – AM – Miss Mariza Lisley da Silva Jurema (PAI #6).

March 03rd / 2023: Meeting with the representant of Chico Mendes Institute for Biodiversity and Conservation - ICMBio – Manicoré – AM – Mister Victor Bruno Alexandre Paoleschi (PAI #6).

March 03rd / 2023: Meeting with the representant of the National Foundation of Indigenous Peoples - FUNAI – Manicoré – AM – Mister Francisco (PAI #6).

March 03rd / 2023: Meeting with the office's local coordinator of Special Secretary of Indigenous Health – SESAI – Miss Marcilene Mereth dos Santos (PAI #6).

May 08th / 2023: Meeting with the mayor (Seluir Peixer) at city hall in Aripuanã-MT (PAI #1).

May 08th / 2023: Meeting with the secretary of Educational Municipal Secretary – SME – Mister Ernes José dos Reis (PAI #1).

May 08th / 2023: Meeting with the secretary of Municipal Secretary of Rural Development -SEMDER – Mister Heiji da Silva Kawatake (PAI #1).

May 08th / 2023: Meeting with the office's local coordinator of Special Secretary of Indigenous Health – SESAI – Miss Luana Crestani (PAI #1).

May 09th / 2023: Meeting with the secretary of Environmental Municipal Secretary – SEMAM –, Aripuanã – MT - Miss Claudete Tomas (PAI #1).

May 09th / 2023: Meeting with local socio environmental company – Jurupará Socioambiental, in Aripuanã-MT – Mister Emerson Oliveira and Mister Henrique Santana (PAI #1).

May 10th / 2023: Public meeting at São Lourenço community with the local association - Associação dos Moradores Agroextrativistas da Resex Guariba-Roosevelt – AMORARR – Aripuanã-MT (PAI #1).

May 16th / 2023: Meeting with the secretary of Health Municipal Secretary – Sena Madureira – AC – Mister Donizete Fernandes (PAI #4).

May 18th / 2023: Meeting with the secretary of department State Secretary of Education, Sport and Culture – Sena Madureira – AC – Miss. Irlany (PAI #4).

August 09th / 2023: Meeting with the representant of Environmental State Secretary of sector of Conservation Unit Coordination – CUCO (PAI #1).

August 10th /2023: Meeting with the secretary of Social Assistance Municipal Secretary – SEMUAS – Aripuanã – MT – Miss Rita Schneider (PAI #1).

August 11th /2023: Meeting with the deputy secretary of Health Municipal Secretary – SEMUSA – Aripuanã – MT – Miss Elenil (PAI #1).

August 12th / 2023: Participatory appraisal and planning with the São Lourenço community at Resex Guariba-Roosevelt – Aripuanã – MT (PAI #1).

August 14th / 2023: Participatory appraisal and planning with the Serra Azul community at Resex Guariba-Roosevelt – Aripuanã – MT (PAI #1).

August 15th / 2023: Meeting with Brazilian Agricultural Research Company – EMBRAPA – Rio Branco – AC – Mister Daniel Moreira Lambertucci e Miss Jana Roiz Saito (PAIs #2-5).

September 22nd / 2023: Meeting with Reference and Social Assistance Center – CRAS – Sena Madureira – AC – Miss Maria Lígia Pessoa da Silva (PAIs #2-5).

November 21st / 2023: Meeting with the office's local coordinator of Special Secretary of Indigenous Health – SESAI – Miss Marcilene Mereth dos Santos (PAI #6).

November 27th / 2023: Meeting with the regional coordinator and responsible technician of the National Foundation of Indigenous People - FUNAI – Manicoré – AM – Mister Emilson Frota de Lima and Ricardo Luiz S. Costa (PAI #6).

December 01st/ 2023: Meeting with National Institute of Colonization and Agrarian Reform – INCRA – Marabá – PA – Mister Clóvis Silva (PAIs #7-15).

2.3.5 Risks from the Project and No Net Harm (VCS, 3.18, 3.19)

Table 23. Risks from the Project

	Identified risk(s)	Potential impact of risk on stakeholders, ecosystem health, and biodiversity	Mitigation or preventative measure(s) taken
Natural and human induced risks to stakeholders' wellbeing	Not identified		
Risks to stakeholder participation	Political (Human-induced)	Specific groups of stakeholders can mobilize against carrying out project activities following their own agendas, which can compromise the project's benefits to communities.	BRC has created a direct channel (found below and in APPENDIX_HELLO-BRC-POSTER) for praises, grievances and proposals, beyond all the public reunions and other forms of communication which are implemented at the project site.
Working conditions	Not identified		
Safety of women and girls	Not identified		
Safety of minority and marginalized groups, including children	Not identified		
Pollutants (air, noise, discharges to water, generation of waste, and release of hazardous materials and chemical pesticides and fertilizers)	Not identified		

	Identified risk(s)	Potential impact of risk on stakeholders, ecosystem health, and biodiversity	Mitigation or preventative measure(s) taken
Discrimination	Not identified		
Sexual harassment	Not identified		
Equal pay for equal work	Not identified		
Gender equity in labor and work	Not identified		
Forced labor13	Not identified		
Child labor	Not identified		
Human trafficking	Not identified		
Recognition of, respect of, and promotion of the rights to IPs, LCs and customary rights holders	Not identified		
Preserving and protecting cultural heritage	Not identified		
Protecting and preserving property rights, customary rights, or protecting legal or customary tenure/access rights to territories, property, and resources, including collective and/or conflicting rights	Political (Human-induced)	Specific groups of stakeholders can mobilize against carrying out project activities following their own agendas, which can compromise the project's benefits to communities	BRC team has already take contact and is constructing a good partnership with the nearest community (Curara village– PAI #6) of the project area and all the main actors who works at the region.

	Identified risk(s)	Potential impact of risk on stakeholders, ecosystem health, and biodiversity	Mitigation or preventative measure(s) taken
Impacts on biodiversity and ecosystems	Predatory hunting and overfishing (Human-induced)	Hunting and fishing are cultural and fundamental aspects of the livelihoods of the traditional communities residing in the project area (PAIs #2-5). These activities are assumed as traditional and of low impacts. On the other hand, these activities are carried out in a disorganized manner, without any kind of monitoring or control, which can harm the project's biodiversity objectives.	A total of twelve biodiversity monitoring campaigns were conducted across the project instances. For more information, please refer to Section 5.
Impacts on biodiversity and ecosystems	Extreme droughts (Natural)	Climatic anomalies such as El-Niño could change the air currents over the Amazon biome, making the forest drier and more flammable, which could compromise the project's climate and biodiversity objectives.	We developed a fire alert monitoring system, based on which helps us control actions in relation to forest fires. Fire monitoring is found in APPENDIX_GIS-DATA > MONITORING_3_2023
Impacts on biodiversity and ecosystems	Wildfires. (Human-induced)	The traditional communities use fire as an instrument for landscape management. This fire can strike the forest, especially in	The project is doing courses of fire management at PAIs in Pará state. In the other PAIs the fire management activities

	Identified risk(s)	Potential impact of risk on stakeholders, ecosystem health, and biodiversity	Mitigation or preventative measure(s) taken
		drier years, and undermine the project's climate benefits.	activities are still planning stage.
Soil degradation and soil erosion	Not identified		
Water consumption and stress	Not identified		
Habitats (and areas needed for habitat connectivity) for rare, threatened, and endangered species	Not identified		
Areas needed for habitat connectivity	Not identified		
Invasive species	Not identified		
Ecosystem conversion	Unavoidable unplanned deforestation. (Human-induced)	The traditional communities residing in the project area (PAIs #2-5) promote deforestation to expand pastures or new plantations. This is most often a reduced magnitude and low impact activities, however, over time, such activities can harm the expected benefits to the climate.	BRC carried out 02 training courses on sustainable cattle raising with the communities of Porongaba, Palmares, Potiguar, Novo Destino e Baturité (PAIs #2-5). There was a total of 03 days of field lectures in 02 farms. 19 people participated. With training in sustainable livestock farming, BRC hopes to improve the productivity of pastures in the project area and reduce pressure on forest remnants.

	Identified risk(s)	Potential impact of risk on stakeholders, ecosystem health, and biodiversity	Mitigation or preventative measure(s) taken
			Nowadays the project is in the planning stage to provide rural technical assistance to improve their productive techniques.
Ecosystem conversion	Unavoidable unplanned deforestation. (Human-induced)	Although there are no communities living within the project areas (PAI #6), there are people who exploit non-timber products, which can be vectors of degradation.	BRC is carrying out a survey of the actors who carry out these periodic extractivism, through an approximation with the nearest community to the project area – Curara village, where the data is been lifted.
Project's Integrity	Political (Human-induced)	Specific groups of stakeholders can mobilize against carrying out project activities following their own agendas, which can compromise the project's benefits to communities.	BRC team has already made contact and is constructing a good partnership with the nearest community (Curara village– PAI #6) of the project area and all the main actors who works at the region. BRC understands that these actions are important, and the strengthening of these relationships happens in the long term. Therefore, BRC constantly carries out communication and local articulation activities, such as delivery and dissemination of the project summary, monitoring results and the verification process,

	Identified risk(s)	Potential impact of risk on stakeholders, ecosystem health, and biodiversity	Mitigation or preventative measure(s) taken
			which were carried out in meetings with public agents (town halls, unions, communities involved



Figure 4. Hello BRC Poster

2.3.6 Community Costs, Risks, and Benefits (CCB, G3.2)

Analysing the costs, risks, and benefits of any project with communities demands a lot of dialogue between the BRC team and the community members, sometimes it is not easy to understand all of them. But, of course, some benefits and costs are clearer than the risks.

It is easier to measure costs in the short, medium, or long term, as it is to measure benefits such as improvement on health or education quality, but the risks usually turn clear after the implementation of the first project's steps, and so on. Therefore, it is during the implementation of the project itself that the compression of the risks is possible, and by this and the community demands that project can improve its ways of shrinking risks and mitigating the noninterest impacts. But even without knowledge or clarity about the potential risks of the project, since the beginning of its implementation, the BRC team has shown, in a transparent way, that there are always risks embedded in all types and forms of projects, especially in those that involve many different interests depending on the multiple communities requires, and its community members.

2.3.7 Information to Stakeholder on Verification Process (VCS, 3.18.6, 3.19; CCB, G3.3)

Throughout project development, the BRC team holds informational meetings and other meetings with interested parties to keep them aware about the needs and dates of verification processes and other issues. More than that, it is BRC's practice to keep all interested parties informed through several different communication methods, such as presented meetings, letters, protocols, contacts on social networks and even personal and informal communications.

2.3.8 Site Visit Information and Opportunities to Communicate with Auditor (VCS, 3.18.6, 3.19; CCB, G3.3)

For all project activity instances, already verified or under verification process, communities were informed about the auditing process during the public meetings held on social engagement. BRC is responsible for the logistics and displacement necessary for the smooth running of the audit, allowing the VVB to have access to community representatives at its own discretion. Communication between auditor and communities will be facilitated by the accompaniment of an independent third party to the process, if demanded by the VVB.

During interviews with community members, it is PP's practice to let auditors free to talk privately with any member of the community. This practice is also informed to the community members before

the auditors' visit, so that they feel free to express their impressions about the project, without any embarrassment.

2.3.9 Stakeholder Consultation (VCS, 3.18; CCB, G3.4)

For all project activity instances, already validated or under validation process, the stakeholder consultation process took place during the participatory workshops for the design of the project activities, developed during the second stage of social engagement, that happens after the initial free, prior, and informed consent (FPIC). But BRC believes that the consent is not just one moment of process, on contrary, it must be constantly in a way to strongly root the relationship between communities and the PP, because of that the contact between the BRC team and the other stakeholders is constant and open, through many different channels and the local staff.

In all public events, developed by BRC team the communities are invited and stimulated to speak freely about their problems and concerns, having in perspective how the project could help them. Beyond that the BRC social team focuses on using multiples strategies and tools to make the consultation more understandable and productive to all interested.

At the end of any events, meetings, and other opportunities to chat, we create a list of possible project activities, but sometimes there are urgent demands which are not presented in the public meetings, as the example of road maintenance requested by the Porongaba's community (PAI #4) through its representants (APPENDIX_EVIDENCE). Anyway, when there are no urgent demands, the constructed list is considered by BRC based on the available budget and the chosen activities are categorized and prioritized as necessary.

For other stakeholders, such as public entities (municipality and state) the consultations are based on communication by e-mail, official letters, protocols and in specific scheduled meetings, all evidence is registered in the project database.

The new community added to the project during the current monitoring period, the RESEX Guariba

Roosevelt, participated in the stakeholder consultation during public and online meetings, as well as during project activities conducted with the community. Consultations were held from 8 to 12 May 2023, 12 to 14 August 2023, and on 28 September 2024, as detailed in the tables below.

Table 24. Stakeholder Consultations

Ongoing consultation	The PP follows the social engagement protocol (APPENDIX_SOCIAL-ENGAGEMENT-PROTOCOL), which outlines all the actions taken to engage with stakeholders and local communities. This protocol ensures ongoing communication and consultation throughout the monitoring period, in line with the validated plan. All interactions, including meetings and outreach activities, were conducted as per the procedures established in this protocol to maintain transparency and foster positive relationships with stakeholders
Date(s) of stakeholder consultation	19 to 25-July-2021
Communication of monitored results	Public meetings to develop the FPIC – first stage. Initially the PP made phone contact with the representatives and asked them the possibility to make a public meeting. Visit to: Palmares Communities Porongaba Communities Katianã Communities Potiguar Communities
Consultation records	The PP presented the entire project conception and its intentions, through a summary of the project and a dialogical process.
Stakeholder input	The participants have requested to install internet on the site and have cited the necessity to create job opportunities in the territory

Ongoing consultation	The PP follows the social engagement protocol (APPENDIX_SOCIAL-ENGAGEMENT-PROTOCOL), which outlines all the actions taken to engage with stakeholders and local communities. This protocol ensures ongoing communication and consultation throughout the monitoring period, in line with the validated plan. All interactions, including meetings and

	outreach activities, were conducted as per the procedures established in this protocol to maintain transparency and foster positive relationships with stakeholders
Date(s) of stakeholder consultation	27-July-2021
Communication of monitored results	The meetings were scheduled by preview contact with the institutions through the channels provided by them, in a formal language as demanded. It was developed as a face-to-face meeting. Visit to: Municipal Health Department (Sena Madureira), with the secretary, miss Nildete Nascimento State Education Department (Sena Madureira Office)
Consultation records	The PP presented the entire project conception and its intentions, through a summary of the project and a dialogical process.
Stakeholder input	No contributions were made by them.

Ongoing consultation	The PP follows the social engagement protocol (APPENDIX_SOCIAL-ENGAGEMENT-PROTOCOL), which outlines all the actions taken to engage with stakeholders and local communities. This protocol ensures ongoing communication and consultation throughout the monitoring period, in line with the validated plan. All interactions, including meetings and outreach activities, were conducted as per the procedures established in this protocol to maintain transparency and foster positive relationships with stakeholders
Date(s) of stakeholder consultation	29-July-2021

Communication of monitored results	The meetings were scheduled by preview contact with the institutions through the channels provided by them, in a formal language as demanded. It was developed as a face-to-face meeting. Visit to: State Education Department (Rio Branco)
Consultation records	The PP presented the entire project conception and its intentions, through a summary of the project and a dialogical process.
Stakeholder input	No contributions were made by them.

Ongoing consultation	The PP follows the social engagement protocol (APPENDIX_SOCIAL-ENGAGEMENT-PROTOCOL), which outlines all the actions taken to engage with stakeholders and local communities. This protocol ensures ongoing communication and consultation throughout the monitoring period, in line with the validated plan. All interactions, including meetings and outreach activities, were conducted as per the procedures established in this protocol to maintain transparency and foster positive relationships with stakeholders
Date(s) of stakeholder consultation	30-July-2021
Communication of monitored results	The meetings were scheduled by preview contact with the institutions through the channels provided by them, in a formal language as demanded. It was developed as a face-to-face meeting. Visit to: Climate Change Institute (State institution – Acre), with the institute president, mister Érico Barbosa

Consultation records	The PP presented the entire project conception and its intentions, through a summary of the project and a dialogical process.
Stakeholder input	No contributions were made by them.

Ongoing consultation	The PP follows the social engagement protocol (APPENDIX_SOCIAL-ENGAGEMENT-PROTOCOL), which outlines all the actions taken to engage with stakeholders and local communities. This protocol ensures ongoing communication and consultation throughout the monitoring period, in line with the validated plan. All interactions, including meetings and outreach activities, were conducted as per the procedures established in this protocol to maintain transparency and foster positive relationships with stakeholders
Date(s) of stakeholder consultation	24-August-2021
Communication of monitored results	The meetings were scheduled by preview contact with the institutions following the initial interaction, a month early. It was developed as a face-to-face meeting. Visit to: Municipal Health Department (Sena Madureira) State Education Department (Sena Madureira Office)
Consultation records	The meeting served to deepen the mutual understanding of needs and to define possible activities together
Stakeholder input	The start of a partnership to implement educational and health activities

Ongoing consultation	The PP follows the social engagement protocol (APPENDIX_SOCIAL-ENGAGEMENT-PROTOCOL), which outlines all the actions taken to engage with stakeholders and local communities. This protocol ensures ongoing communication and consultation throughout the monitoring period, in line with the validated plan. All interactions, including meetings and outreach activities, were conducted as per the procedures established in this protocol to maintain transparency and foster positive relationships with stakeholders
Date(s) of stakeholder consultation	25-March-2022
Communication of monitored results	Public meetings to inform about the development of the project and to receive grievances, praises and new demands. The invite was made by phone, personal contacts and by radio. Visit to: Porongaba Riverside Communities
Consultation records	The meeting focused on inform and discus project activities, to map demands
Stakeholder input	The beneficiaries demanded expansion of internet access and improvement on the school condition, beyond other demand (trainings, job opportunities, income)

Ongoing consultation	The PP follows the social engagement protocol (APPENDIX_SOCIAL-ENGAGEMENT-PROTOCOL), which outlines all the actions taken to engage with stakeholders and local communities. This protocol ensures ongoing communication and consultation throughout the monitoring period, in line with the validated plan. All interactions, including meetings and outreach activities, were conducted as per the procedures established in this protocol to maintain

	transparency and foster positive relationships with stakeholders
Date(s) of stakeholder consultation	27-March-2022
Communication of monitored results	Public meetings to inform about the development of the project and to receive grievances, praises and new demands. The invite was made by phone, personal contacts and by radio. Visit to: Porongaba Center Communities
Consultation records	The meeting focused on inform and discus project activities, to map demands
Stakeholder input	The beneficiaries demanded expansion of internet access and improvement on the school condition (Income, health issues, energy access)

Ongoing consultation	The PP follows the social engagement protocol (APPENDIX_SOCIAL-ENGAGEMENT-PROTOCOL), which outlines all the actions taken to engage with stakeholders and local communities. This protocol ensures ongoing communication and consultation throughout the monitoring period, in line with the validated plan. All interactions, including meetings and outreach activities, were conducted as per the procedures established in this protocol to maintain transparency and foster positive relationships with stakeholders
Date(s) of stakeholder consultation	28-March-2022

Communication of monitored results	Public meetings to inform about the development of the project and to receive grievances, praises and new demands. The invite was made by phone, personal contacts and by radio. Visit to: Palmares Communities
Consultation records	The meeting focused on inform and discus project activities, to map demands
Stakeholder input	The beneficiaries demanded expansion of internet access and improvement on the school condition (Improve access to water, health issues, energy access, sanitation)

Ongoing consultation	The PP follows the social engagement protocol (APPENDIX_SOCIAL-ENGAGEMENT-PROTOCOL), which outlines all the actions taken to engage with stakeholders and local communities. This protocol ensures ongoing communication and consultation throughout the monitoring period, in line with the validated plan. All interactions, including meetings and outreach activities, were conducted as per the procedures established in this protocol to maintain transparency and foster positive relationships with stakeholders
Date(s) of stakeholder consultation	30-March-2022
Communication of monitored results	Public meetings to inform about the development of the project and to receive grievances, praises and new demands. The invite was made by phone, personal contacts and by radio. Visit to:

	Potiguar Communities
Consultation records	The meeting focused on inform and discus project activities, to map demands
Stakeholder input	The beneficiaries demanded expansion of internet access and improvement on the school condition (Improve access to water, health issues, energy access, scholar transportation)

Ongoing consultation	The PP follows the social engagement protocol (APPENDIX_SOCIAL-ENGAGEMENT-PROTOCOL), which outlines all the actions taken to engage with stakeholders and local communities. This protocol ensures ongoing communication and consultation throughout the monitoring period, in line with the validated plan. All interactions, including meetings and outreach activities, were conducted as per the procedures established in this protocol to maintain transparency and foster positive relationships with stakeholders
Date(s) of stakeholder consultation	03-April-2022
Communication of monitored results	Public meetings to inform about the development of the project and to receive grievances, praises and new demands. The invite was made by phone, personal contacts and by radio. Visit to: Katianã Communities
Consultation records	The meeting focused on inform and discus project activities, to map demands
Stakeholder input	The beneficiaries demanded expansion of internet access and improvement on the school condition (Improve access to water, health issues, energy access, scholar transportation)

Ongoing consultation	The PP follows the social engagement protocol (APPENDIX_SOCIAL-ENGAGEMENT-PROTOCOL), which outlines all the actions taken to engage with stakeholders and local communities. This protocol ensures ongoing communication and consultation throughout the monitoring period, in line with the validated plan. All interactions, including meetings and outreach activities, were conducted as per the procedures established in this protocol to maintain transparency and foster positive relationships with stakeholders
Date(s) of stakeholder consultation	03-May-2022
Communication of monitored results	The meetings were scheduled by preview contact with the institutions through the channels provided by them, in a formal language as demanded. It was developed as a face-to-face meeting. Visit to: Regional Branch of the State Secretariat of Environment and Sustainable Development (SEMAS/PA) – Chat with the local coordinator and an environmental technician, miss Luana Alves and miss Bianca. Municipal Department of Development and Social Assistance (SEMDES/Paragominas) – Chat with the municipal secretary, miss Amanda Purger Municipal Department of Green and Environment (SEMMA/Paragominas) – Chat with the municipal secretary, mister Roberto Gambin Environment Municipal Secretary (SEMA – Ipixuna do Pará) – Chat with a representant, miss Luanda Silva
Consultation records	The PP presented the entire project conception and its intentions, through a summary of the project and a dialogical process.
Stakeholder input	No contributions were made by them.

Ongoing consultation	The PP follows the social engagement protocol (APPENDIX_SOCIAL-ENGAGEMENT-PROTOCOL), which outlines all the actions taken to engage with stakeholders and local communities. This protocol ensures ongoing communication and consultation throughout the monitoring period, in line with the validated plan. All interactions, including meetings and outreach activities, were conducted as per the procedures established in this protocol to maintain transparency and foster positive relationships with stakeholders
Date(s) of stakeholder consultation	04-May-2022
Communication of monitored results	The meetings were scheduled by preview contact with the institutions through the channels provided by them, in a formal language as demanded. It was developed as a face-to-face meeting. Visit to: Vale do Acará Agricultural Association (AAVA) – Chat with its president and representants of the supervisory board director, mister Manoel Lima, mister João Cláudio Nivaldo and mister Ataíde Moura Environmental Municipal Secretary (SEMMA/Tomé Açu) – Chat with the municipal secretary, mister Cosmo Amaral
Consultation records	The PP presented the entire project conception and its intentions, through a summary of the project and a dialogical process.
Stakeholder input	No contributions were made by them.

Ongoing consultation	The PP follows the social engagement protocol (APPENDIX_SOCIAL-ENGAGEMENT-PROTOCOL), which outlines all the actions taken to engage with stakeholders and local communities. This protocol

	ensures ongoing communication and consultation throughout the monitoring period, in line with the validated plan. All interactions, including meetings and outreach activities, were conducted as per the procedures established in this protocol to maintain transparency and foster positive relationships with stakeholders
Date(s) of stakeholder consultation	05-May-2022
Communication of monitored results	The meetings were scheduled by preview contact with the institutions through the channels provided by them, in a formal language as demanded. It was developed as a face-to-face meeting. Visit to: State Agency of Agricultural Defense (ADEPARÁ/local office – Dom Eliseu) – Chat with the mayor, and the secretaries of Environment, Economic Develop, Mining, Industry, Trade and Tourism, Treasury, and the representants of Dom Eliseu's Rural Workers Syndicate, mister Gersilon Gama, mister Maikon Mantelli, miss Mônica Aguiar, mister Genilson Cavalcanti, and mister Tarcizio Burin, miss Laura Priore and mister Guilherme Araújo Rural Workers Syndicate (Rondon do Pará/PA) – Chat with its president, a secretary and its lawyer, mister João Malcher, miss Cristina Malcher and Maria Eduarda Malcher
Consultation records	The PP presented the entire project conception and its intentions, through a summary of the project and a dialogical process.
Stakeholder input	No contributions were made by them.

Ongoing consultation	The PP follows the social engagement protocol (APPENDIX_SOCIAL-ENGAGEMENT-PROTOCOL), which outlines all the actions taken to engage with stakeholders and local communities. This protocol

	ensures ongoing communication and consultation throughout the monitoring period, in line with the validated plan. All interactions, including meetings and outreach activities, were conducted as per the procedures established in this protocol to maintain transparency and foster positive relationships with stakeholders
Date(s) of stakeholder consultation	04 to 16-June-2022
Communication of monitored results	Public meetings to develop the FPIC – first stage. Initially the PP made phone contact with the representatives and asked them about the possibility to make a public meeting. Visit to: Águia Settlement Bom Jesus Settlement Irmã Dorothy Settlement Barreirinha Indigenous Land
Consultation records	The PP presented the entire project conception and its intentions, through a summary of the project and a dialogical process.
Stakeholder input	The contributions were basically related to job opportunities, improvement on local income, educational issues, and strength associations.

Ongoing consultation	The PP follows the social engagement protocol (APPENDIX_SOCIAL-ENGAGEMENT-PROTOCOL), which outlines all the actions taken to engage with stakeholders and local communities. This protocol ensures ongoing communication and consultation throughout the monitoring period, in line with the validated plan. All interactions, including meetings and outreach activities, were conducted as per the procedures established in this protocol to maintain

	transparency and foster positive relationships with stakeholders
Date(s) of stakeholder consultation	04 to 16-August-2022
Communication of monitored results	Public meetings to inform about the development of the project and to receive grievances, praises and new demands. The invite was made by phone, personal contacts and by radio. Visit to: Potiguar Communities
Consultation records	The meeting focused on inform, discus and present the social diagnose
Stakeholder input	No contributions were made by them.

Ongoing consultation	The PP follows the social engagement protocol (APPENDIX_SOCIAL-ENGAGEMENT-PROTOCOL), which outlines all the actions taken to engage with stakeholders and local communities. This protocol ensures ongoing communication and consultation throughout the monitoring period, in line with the validated plan. All interactions, including meetings and outreach activities, were conducted as per the procedures established in this protocol to maintain transparency and foster positive relationships with stakeholders
Date(s) of stakeholder consultation	12-January-2023
Communication of monitored results	The meetings were scheduled by preview contact with the institutions through the channels provided by them, in a formal language as demanded. It was developed as a face-to-face meeting.

	Visit to: Municipal Educational Secretary (SEMED – Rondon do Pará) – Chat with the municipal secretary, miss Kelly Cristina
Consultation records	The meeting served to deepen the mutual understanding of needs and to define possible activities together
Stakeholder input	The secretary showed the best way to impact the school's quality in the region

Ongoing consultation	The PP follows the social engagement protocol (APPENDIX_SOCIAL-ENGAGEMENT-PROTOCOL), which outlines all the actions taken to engage with stakeholders and local communities. This protocol ensures ongoing communication and consultation throughout the monitoring period, in line with the validated plan. All interactions, including meetings and outreach activities, were conducted as per the procedures established in this protocol to maintain transparency and foster positive relationships with stakeholders
Date(s) of stakeholder consultation	01 to 08-February-2023
Communication of monitored results	The meetings were scheduled by preview contact with the institutions through the channels provided by them, in a formal language as demanded. It was developed as a face-to-face meeting. Visit to: Jurupará Socioambiental – Chat with the company president, mister Emerson

	Water Pact Development of Socio-Environmental Projects – Chat with the institution president, mister Everaldo Santos Municpal Chamber of Councilors (Aripuanã/MT) - Chat with the institution president, miss Sinéia Santos, and the Councilor mister Jaime Yung Municipal City Hall (Aripuanã/MT) - Chat with the mayor, miss Seloir Peixer, and the Environmental Municipal secretary, miss Claudete Thomas
Consultation records	The PP presented the entire project conception and its intentions, through a summary of the project and a dialogical process.
Stakeholder input	No contributions were made by them.

Ongoing consultation	The PP follows the social engagement protocol (APPENDIX_SOCIAL-ENGAGEMENT-PROTOCOL), which outlines all the actions taken to engage with stakeholders and local communities. This protocol ensures ongoing communication and consultation throughout the monitoring period, in line with the validated plan. All interactions, including meetings and outreach activities, were conducted as per the procedures established in this protocol to maintain transparency and foster positive relationships with stakeholders
Date(s) of stakeholder consultation	02 to 11-March-2023
Communication of monitored results	Public meetings to inform the development of the activities, a month before occurred a mobilization house to house to invite to the meetings

	Visit to: Palmares Communities Porongaba Communities Katianã Communities Potiguar Communities
Consultation records	The meeting focused on inform, discus project activities, to map and renegotiate demands
Stakeholder input	The beneficiaries demanded the same issues as already mapped

Ongoing consultation	The PP follows the social engagement protocol (APPENDIX_SOCIAL-ENGAGEMENT-PROTOCOL), which outlines all the actions taken to engage with stakeholders and local communities. This protocol ensures ongoing communication and consultation throughout the monitoring period, in line with the validated plan. All interactions, including meetings and outreach activities, were conducted as per the procedures established in this protocol to maintain transparency and foster positive relationships with stakeholders
Date(s) of stakeholder consultation	02 to 03-March-2023
Communication of monitored results	The meetings were scheduled by preview contact with the institutions through the channels provided by them, in a formal language as demanded. It was developed as a face-to-face meeting. Visit to: Institute for Sustainable Agricultural and Forestry Development of the State (IDAM – Local office) – Chat with the local representant, miss Mariza Jurema National Council of Extractive Populations (CNS – Local office) – Chat with the local representant, miss Silvia Elena

	Chico Mendes Institute for Biodiversity Conservation (ICMBio – Local office) - Chat with the local representant, mister Victor Paoleschi National Foundation of Indigenous People (FUNAI – Local office) - Chat with the local representant, mister Francisco Special Indigenous Health District of the Special Secretariat for Indigenous Health (DSEI/SESAI) - Chat with the local representant, miss Marcilene Mereth Organization of Indigenous Peoples Torá, Tratari, Apurinã, Mura, Parintintin and Pirahã (OPITTAMPP) - Chat with the local representant, mister Francisco Borges
Consultation records	The PP presented the entire project conception and its intentions, through a summary of the project and a dialogical process. And informed about the auditory which was to happen.
Stakeholder input	Reinforce the Brazilian nuts value chain in the region, strengthen the local associations, and support to indigenous health activities

Ongoing consultation	The PP follows the social engagement protocol (APPENDIX_SOCIAL-ENGAGEMENT-PROTOCOL), which outlines all the actions taken to engage with stakeholders and local communities. This protocol ensures ongoing communication and consultation throughout the monitoring period, in line with the validated plan. All interactions, including meetings and outreach activities, were conducted as per the procedures established in this protocol to maintain transparency and foster positive relationships with stakeholders
Date(s) of stakeholder consultation	08 to 12-May-2023

Communication of monitored results	The meetings were scheduled by preview contact with the institutions through the channels provided by them (email, phone, whatsapp), in a formal language as demanded. It was developed as a face-to-face meeting. Visit to: Municipal City Hall (Aripuanã/MT) - Chat with the mayor, miss Seloir Peixer Municipal Environmental Secretary (SEMAM - Aripuanã/MT), Chat with the secretary, miss Claudete Thomas Municipal Education Secretary (SME - Aripuanã/MT), Chat with the secretary, mister Ernes Reis Municipal Rural Development Secretary (SEMDER - Aripuanã/MT), Chat with the secretary, mister Heiji Kawatake National Foundation of Indigenous People (FUNAI – Aripuanã/MT), Chat with the local coordinator, mister Adegildo Nascimento Special Indigenous Health District of the Special Secretariat for Indigenous Health (DSEI/SESAI) - Chat with the local representant, miss Luana Crestani Jurupará Socioambiental – Chat with the company president, mister Emerson Water Pact Development of Socio-Environmental Projects – Chat with the institution president, mister Everaldo Santos Association of Agroextractive Residents of Resex Guariba Roosevelt – Rio Guariba (AMORARR), Chat with the association president, mister Ailton and other representants Yukapkataw Indigenous Association of the Arara People, Chat with some representants Marupá Indigenous Association of the Arara People, Chat with some representants
Consultation records	The PP presented the entire project conception and its intentions, through a summary of the project and a dialogical process. And deepened its understanding to some of the contacts that were made before

Stakeholder input	The main contributions were to strengthen the local associations, and support to indigenous health activities, but there were many others

Ongoing consultation	The PP follows the social engagement protocol (APPENDIX_SOCIAL-ENGAGEMENT-PROTOCOL), which outlines all the actions taken to engage with stakeholders and local communities. This protocol ensures ongoing communication and consultation throughout the monitoring period, in line with the validated plan. All interactions, including meetings and outreach activities, were conducted as per the procedures established in this protocol to maintain transparency and foster positive relationships with stakeholders
Date(s) of stakeholder consultation	16 to 18-May-2023
Communication of monitored results	The meetings were scheduled by preview contact with the institutions through the channels provided by them, in a formal language as demanded. It was developed as a face-to-face meeting. Visit to: Municipal Health Department (Sena Madureira), chat with the secretary, mister Donizete Fernandes and the coordinator of the Program Itinerant Health State Education Department (Sena Madureira Office)
Consultation records	The meeting served to deepen the mutual understanding of needs and to define possible activities together and to schedule a meeting with the auditor
Stakeholder input	The need to deep and formalize new partnerships.

Ongoing consultation	The PP follows the social engagement protocol (APPENDIX_SOCIAL-ENGAGEMENT-PROTOCOL), which outlines all the actions taken to engage with stakeholders and local communities. This protocol ensures ongoing communication and consultation throughout the monitoring period, in line with the validated plan. All interactions, including meetings and outreach activities, were conducted as per the procedures established in this protocol to maintain transparency and foster positive relationships with stakeholders
Date(s) of stakeholder consultation	09 to 11-August-2023
Communication of monitored results	The meetings were scheduled by preview contact with the institutions through the channels provided by them, in a formal language as demanded. It was developed as a face-to-face meeting. Visit to: State Environmental Secretary (SEMA/MT) – chat with the coordinator of the Conservation Units Coordination, mister Elder Monteiro Municipal Secretary of Social Assistence (SEMUAS – Aripuanã) – chat with the secretary, miss Rita Schneider Municipal Health Secretary – (SEMUSA – Aripuanã) - chat with the vice secretary, miss Elenil
Consultation records	The PP presented the entire project conception and its intentions, through a summary of the project and a dialogical process. And deepened its understanding to some of the contacts that were made before
Stakeholder input	The need to deep and formalize new partnerships.

Ongoing consultation	The PP follows the social engagement protocol (APPENDIX_SOCIAL-ENGAGEMENT-PROTOCOL), which outlines all the actions taken to engage with stakeholders and local communities. This protocol ensures ongoing communication and consultation throughout the monitoring period, in line with the validated plan. All interactions, including meetings and outreach activities, were conducted as per the procedures established in this protocol to maintain transparency and foster positive relationships with stakeholders
Date(s) of stakeholder consultation	12 to 14-August-2023
Communication of monitored results	Public meetings to make participatory appraisal and to inform about the development of the project. The invite was made by phone, personal contacts and by radio. Visit to: São Lourenço and Serra Azul Communities – Resex Guariba Roosevelt
Consultation records	The meeting served to explain the possibilities of the project to support social actions in the communities
Stakeholder input	The main demand was related to strengthen the association through activities with young people to be more involved to the local association

Ongoing consultation	The PP follows the social engagement protocol (APPENDIX_SOCIAL-ENGAGEMENT-PROTOCOL), which outlines all the actions taken to engage with stakeholders and local communities. This protocol ensures ongoing communication and consultation throughout the monitoring period, in line with the validated plan. All interactions, including meetings and outreach activities, were conducted as per the procedures established in this protocol to maintain

	transparency and foster positive relationships with stakeholders
Date(s) of stakeholder consultation	15-August-2023
Communication of monitored results	The meetings were scheduled by preview contact with the institutions through the channels provided by them, in a formal language as demanded. It was developed as a face-to-face meeting. Visit to: Brazilian Agricultural Research Company (EMBRAPA – Rio Branco) – Chat with the technicians
Consultation records	The PP presented the entire project conception and its intentions, through a summary of the project and a dialogical process. And deepened its understanding to some of the contacts that were made before
Stakeholder input	They presented the impossibility of work directly with the territory because of lack of workers

Ongoing consultation	The PP follows the social engagement protocol (APPENDIX_SOCIAL-ENGAGEMENT-PROTOCOL), which outlines all the actions taken to engage with stakeholders and local communities. This protocol ensures ongoing communication and consultation throughout the monitoring period, in line with the validated plan. All interactions, including meetings and outreach activities, were conducted as per the procedures established in this protocol to maintain transparency and foster positive relationships with stakeholders
Date(s) of stakeholder consultation	21-September-2023

Communication of monitored results	The meetings were scheduled by preview contact with the institutions through the channels provided by them, in a formal language as demanded. It was developed as a face-to-face meeting. Visit to: Municipal Educational Secretary (SEMED – Rondon do Pará) – Chat with the municipal secretary, miss Kelly Cristina, and the secretary staff
Consultation records	The PP presented the proposal to build and refurbish two municipal schools at PA Bom Jesus and PA Irmã Dorothy
Stakeholder input	The path to formalize the proposal in an appropriated, formal and legal way

Ongoing consultation	The PP follows the social engagement protocol (APPENDIX_SOCIAL-ENGAGEMENT-PROTOCOL), which outlines all the actions taken to engage with stakeholders and local communities. This protocol ensures ongoing communication and consultation throughout the monitoring period, in line with the validated plan. All interactions, including meetings and outreach activities, were conducted as per the procedures established in this protocol to maintain transparency and foster positive relationships with stakeholders
Date(s) of stakeholder consultation	22-September-2023
Communication of monitored results	The meetings were scheduled by preview contact with the institutions through the channels provided by them, in a formal language as demanded. It was developed as a face-to-face meeting. Visit to:

	Reference and Social Assistance Center (CRAS – Sena Madureira) – Chat with the local coordinator, miss Maria Lígia
Consultation records	The PP presented the need to understand the ways for the communitarians access their social rights
Stakeholder input	They said to wait for the new rules that was being developing

Ongoing consultation	The PP follows the social engagement protocol (APPENDIX_SOCIAL-ENGAGEMENT-PROTOCOL), which outlines all the actions taken to engage with stakeholders and local communities. This protocol ensures ongoing communication and consultation throughout the monitoring period, in line with the validated plan. All interactions, including meetings and outreach activities, were conducted as per the procedures established in this protocol to maintain transparency and foster positive relationships with stakeholders
Date(s) of stakeholder consultation	28 September 2023
Communication of monitored results	Online meeting with Jurupará staff and representants of Association of Residents of the Guariba Roosevelt Agroextractivist Reserve - AMORARR and the local representant of the National Council of Extractvist Population – CNS. The purpose of the meeting was to present the project's proposed activities to the community.
Consultation records	The suggestions made by the community members during the meeting were considered and documented in a report.
Stakeholder input	Community leader Carlos Augusto Paiva de Oliveira, Vice President of AMORARR, suggested that it would

	be important for them to alternate the location of the activities between São Lourenço and São Francisco communities.

Ongoing consultation	The PP follows the social engagement protocol (APPENDIX_SOCIAL-ENGAGEMENT-PROTOCOL), which outlines all the actions taken to engage with stakeholders and local communities. This protocol ensures ongoing communication and consultation throughout the monitoring period, in line with the validated plan. All interactions, including meetings and outreach activities, were conducted as per the procedures established in this protocol to maintain transparency and foster positive relationships with stakeholders
Date(s) of stakeholder consultation	09 to 11-October-2023
Communication of monitored results	The meetings were scheduled by preview contact vie WhatsApp and face to face visit Visit to: Porongaba center community Porongaba Riverside community Palmares community
Consultation records	The developing of women group at the territory
Stakeholder input	The necessity to repeat and deep the activities involving women at the territory

Ongoing consultation	The PP follows the social engagement protocol (APPENDIX_SOCIAL-ENGAGEMENT-PROTOCOL), which outlines all the actions taken to engage with stakeholders and local communities. This protocol

	ensures ongoing communication and consultation throughout the monitoring period, in line with the validated plan. All interactions, including meetings and outreach activities, were conducted as per the procedures established in this protocol to maintain transparency and foster positive relationships with stakeholders
Date(s) of stakeholder consultation	04-December-2023
Communication of monitored results	The meetings were scheduled by preview contact with the institutions through the channels provided by them, in a formal language as demanded. It was developed as a face-to-face meeting. Visit to: National Institute of Colonization and Agrarian (INCRA – Marabá) – Chat with the local coordinator
Consultation records	The PP presented the proposal to build and refurbish two municipal schools at PA Bom Jesus and PA Irmã Dorothy
Stakeholder input	The path to formalize the proposal in an appropriated, formal and legal way

2.3.10 Continued Consultation and Adaptive Management (VCS, 3.18; CCB, G3.4)

For all project activity instances, whether already verified or under verification process, the GPD continued communication and consultation plan is based on digital inclusion, annual public meetings and informal visits and conversations.

BRC provided means of communication such as face-to-face (presential), internet and telephone, which enable effective and continuous communication with isolated communities through calls and messages. This mechanism also allows for consultations to be carried out during the time there are no visits to the territory.

Annual public meetings have taken place to report the results of participatory monitoring on the implementation of project activities. During these events, communities have new chances to

influence the project design and its implementation during the subsequent monitoring period. Other way which communities must influence the project management is through its own meetings, using the instruments as meeting minutes demanding what are their necessities. All these instruments are fundamental to the PP has a whole frame of the project perception by the beneficiaries, and from it make the properly adaptative management when it is necessary.

Thus, the PP team uses appropriate tools to analyse changes in the territory in environmental, political, social, and economic issues to carry out appropriately adaptive management.

Table 25. Received Comments

Summary of comments received	Actions taken
During a visit to the Porongaba territory, at the beginning of 2023, community members from the localities of Santa Luzia and Baixa Alegre, proposed to the PP that the side road that connects these places to the territory's main road be made a maintenance, to improve their accessibility to both central region of Porongaba and the city of Rio Branco.	The PP has accepted the proposal and did the improvement on 18 km of the side road.

2.3.11 Stakeholder Consultation Channels (CCB, G3.5)

For all project activity instances, already verified or under verification process, the social engagement protocol developed by BRC, as cited above, ensured that all consultations and participatory processes were undertaken directly with communities and other stakeholders. It's worth noting that for many reasons there are different stages in the relationship between BRC and the territories and its communities of each instance, meaning that in some instances these consultation channels are more advanced than others. The main reason for this is the lifetime of each instance, in addition to the particularities of each community group, as having or not regular associations, cooperatives or other kind of local social organizations.

The direct consultation and involvement of communities in participatory processes so far, are evidenced by photographic records in the folder APPENDIX_EVIDENCE. Some of these images are found below:



Figure 5. Meeting with INCRA on Bom Jesus School Renovation

2.3.12 Stakeholder Participation in Decision-Making and Implementation (VCS, 3.18, 3.19; CCB, G3.6)

For all project activity instances, already verified or under verification process, stakeholder participation in decision-making was ensured by the BRC social engagement protocol, which provided, in its second stage, the execution of participatory workshops for the design of the project. During these workshops, an exclusive space was reserved for the participation of women, free from the influence of men, to take care of gender aspects. Furthermore, the PP is developing women's groups to enable them to understand the principles of the project and to receive their demands and interests.

And, more than that, to assure the properly participation of women in all meetings, the BRC social engagement protocol predicts a team to stay with the kids to let the women free to be part of the

decision-making process. BRC is formed by multidisciplinary professionals, some of them with more than 15 years of experience in developing carbon projects, which gives them the necessary skills to conduct public meetings with appropriate language. A comic book was produced and distributed to the communities to help them better understand the nature and scope of the carbon project, among other relevant aspects. The effectiveness of the participation mechanisms implemented so far can be evidenced by the description of the project activities, which reflect the demands presented by the community.

2.3.13 Anti-Discrimination Assurance (VCS, 3.19; CCB, G3.7)

BRC bases its anti-discrimination practice through internal policies and regulations as the company's Social Statute (APPENDIX_SOCIAL-STATUTE), its Ethics and Conduct Code (APPENDIX_ETHICS-AND-CONDUCT-CODE) and activities and lectures of anti-discrimination agenda involving its workers (APPENDIX_HUMAN-RESOURCES-ACTIVITIES).

Furthermore, BRC's code of ethics states that all employees, directors, and company partners must comply with all relevant laws related to anti-discrimination assurance.

The landowner partner as well signed a conservation agreement (APPENDIX_LEGAL-AGREEMENTS) that clearly states that both parts must follow all the applicable laws, regarding project implementation and management and their commitment with no forms of segregation, including discrimination based on gender, race, religion, sexual orientation, or other habits.

As another strategy to avoid this kind of issue, the company created a direct channel between the communities and our staff for complaints and reports about these challenges. (APPENDIX_COMMUNICATION-CHANNEL).

2.3.14 Grievances (VCS, 3.18.4; CCB, G3.8)

At BRC, we recognize that people's engagement, needs, and well-being are critical to sustaining the project over the long term. Therefore, we maintain direct communication with stakeholders and the community through calls and messages so that communication, feedback, and complaints are always possible, the BRC has developed a direct channel (APPENDIX_HELLO-BRC-POSTER) to receive all grievances from communitarians and institutions (APPENDIX_FLOWCHART-COMPLAINTS).

Each year, the BRC team holds at least one meeting with each community involved in the project's activities. At these meetings, we gather input on the activities that have already been implemented

and requests to maintain or implement new activities. In these opportunities, the team will apply questionnaires to objectively properly developed to measure the effectiveness of activities. During these meetings the team also share with the community the mechanisms of which the grievances and identified problems will be solved. For the new PAIs the grievance mechanism is presented in the early stages of the stakeholder engagement.

The process for receiving, hearing, responding to and resolving complaints is defined and described in three stages:

First step: amicable negotiation. We listen to and analyse complaints from communities and other relevant stakeholders and provide an oral or written response within one week via e-mail and/or WhatsApp, or through face-to-face meetings.

Second step: mediation by a neutral party. If the BRC team cannot resolve a complaint amicably through clarification or redress, the dispute is referred to an independent third party for mediation. This third party may vary depending on the nature of the dispute. If the dispute is a land dispute, we may refer the matter to the state or federal land agency. If the dispute is between communities, it may be mediated by the BRC or community association representatives.

Third step: arbitration: if the third party is unable to mediate the ongoing dispute, the ongoing dispute will be assessed in the District of Piracicaba or in the local district.

The section below shows the registry made of grievances received, feedback given, and redress measures taken by the project proponent in the monitored period.

Table 26. Grievances

Grievances received	Resolution and outcome
Internet Distribution	During the monitoring period, the project proponent received requests for internet installation in households on the Porongaba, Katiana and Potiguar farms. As feedback, the families that made such requests were informed that the internet installed through signal repeater towers has range limitations and is not a viable solution for all cases, but that brCarbon could consider the purchase and installation of satellite internet (StarLink) as a project activity if the families committed to making monthly payments for the equipment. Some families accepted the agreement. brCarbon will consider the purchase and installation of this equipment as a project activity in the future, and this activity must

Grievances received	Resolution and outcome
	comply with the physical and financial execution schedule of the project. The community responded with understanding. Feedback was given orally during home visits to these families or via audio messages via WhatsApp, which are the most culturally appropriate ways of communicating with such traditional communities.
Formation of new subsistence plantations	During the monitoring period, the project proponent received complaints about the impossibility of clearing new areas on the donated land plots in Porongaba farm. As feedback to these families, they were told that the donated plots were demarcated based on areas previously cleared by the families of the community, to consider and respect the previous effort in establishing their colony and to recognize the rights of possession as property rights. In addition, it was explained to them that the legal reserve of the plots would be registered as condominium in the farm deed, in order to regularize each plot in accordance with the environmental legislation in force in the country. As a reparation measure, brCarbon will implement clearings using machinery in previously opened areas, carrying out soil correction, fertilization, weed control and using improved seeds in order to improve land productivity without the need to open new forest areas (which was done in 2024), in addition to making payments for environmental services totaling 12 thousand reais per year to families that did not deforest (which is yet to be done).The agricultural support is planned to start in 2024 and the payment in 2025. Feedback was given orally during public meetings to these families or via audio messages via WhatsApp, which are the most culturally appropriate ways of communicating with such traditional communities.
The slowness to delivery of energy and water pumps kits	During the monitoring period, the project proponent received complaints about the delay in installation of structures of energy and water pumps to the families' houses. As feedback, the families that made such requests were informed that at Porongaba farm, 43

Grievances received	Resolution and outcome
	families were mapped to receive the kits, and that until 2023 22 kits were delivered. brCarbon also reaffirmed its commitment to continue delivering the kits to the remaining families, taking into account the physical and financial schedule of the project. The delivery is planned to be finished until the end of 2025, the community is updated frequently on this subject. Feedback was given orally during home visits to these families or via audio messages via WhatsApp, which are the most culturally appropriate ways of communicating with such traditional communities.
Purchase and assistance in the sale of production	During the monitoring period, the project proponent received requests for assistance in marketing cattle produced on the Porongaba farm, so that families could work with fairer prices, eliminating intermediaries. As feedback, the complaining families were informed that the project could evaluate ways to make such actions viable. As a concrete measure, brCarbon purchased a small area of land occupied by the intermediary cattle buyer on the Porongaba Farm to collect the cattle purchased from the communities, with the intention of starting to purchase cattle in the territory, taking the place of the intermediary cattle buyer, practicing fairer prices and rewarding sustainable practices. Feedback was given orally during home visits to these families or via audio messages via WhatsApp, which are the most culturally appropriate ways of communicating with such traditional communities.

2.3.15 Worker Training (VCS, 3.19; CCB, G3.9)

The project has, so far, made some worker trainings in some instances for different kinds of activities, such as: formation of local labor force to support activities of forest inventory, Technical Assistance and Rural Extension (ATER) related to sustainable livestock, lectures about various themes, and others. Furthermore, the internet access guaranteed to the communitarians living inside four

instances (PAIs #2-5) made possible to some young people follow online courses and trainings to improve their labor skills.

At PAI #1, the project has proposed and hired a young communitarian to make a professional internship in a partner company (Jurupará Socioambiental) which is supporting the project activities in the ground (RESEX Guariba-Roosevelt) and helping the local association to strengthen itself, the main demand from them were a professional formation for young communitarians to foster young people to participate in the organization issues (ANNEX_JURUPARA-INTERNSHIP-CONTRACT).

In Curara community, nearby PAI #6, no training activities have yet been developed, however it was mapped the local interest in creating a new association focusing on selling their production, mainly manioc flour and Brazilian nuts.

About the instances around Paragominas' region (PAIs #7-15) the PP has just mapped the demands, as honey production, handcraft, and other productive strategies.

2.3.16 Community Employment Opportunities (VCS, 3.19.13; CCB, G3.10)

The project has hired different kind of workers between the communitarians living in the project involved communities. Such as forest workers, boatmen, carpenters, general service assistant, and others. In each region where there are instances the demands were different what has required various strategies to map and hire them.

The selective process was done in a transparent way. And it has considered the interest, involvement, and skills of each professional, considering, and prioritizing women for hiring. The job vacancies/opportunities were informed in public meetings, message contacts and informal communications during visits on the ground.

For the next stages of the project, the PP is organizing local activities to map all professionals interested and able to work with the project's demands. Another strategy adopted by the PP is to require in legal contracts with third parties (companies that hide to carry out works on the ground) the hiring of community members whenever possible, guaranteeing them employment opportunities in these activities.

2.3.17 Occupational Safety Assessment (VCS, 3.19; CCB, G3.12)

For all project activity instances, already verified or under verification process, the risk analysis to the workers safety was based in the proposed jobs opportunity. Each employment opportunity has a unique assessment to reflect the particularities of the job. During the execution of the project, a

series of measures and actions aimed at the health and safety of the worker is necessary. It is also necessary to understand the risk involved in the activities carried out. On its context, during the job, diary activities will be proposed, such the Safety, Environment and Health Diary Dialogue (DDSMS), that will be promoted to inform workers about their rights and about their obligations as individual and as a team. For this BRC is creating a video guide to spread through the hired workers the main necessities to guarantee health and safety practices, this guide is coming out during 2024.

Training on disease and accident prevention is planned for workers linked to the project, along with clarifications and general education, beyond conduct actions that minimize accidents and harm to workers' health. Appropriate care for emergency situations will be proposed, with the establishment of local resources for health care and removal of victims in any accidents. To guarantee quick health attendance in emergencies situations the BRC is keeping the field team with constant access to communication means, specially through use of “Starlink” internet antennas, which are the best system to use in the amazon field.

The risk analysis to the workers safety, that could be impacted due to the project activities, was based in the proposed jobs opportunity that occurred in each instance.

Each employment opportunity will have a unique assessment to reflect the particularities of the job. The use of Personal Protective Equipment (PPE) to be used by different professionals will be widely encouraged and doubts about this aspect will be resolved whenever they occur.

Field guide (*mateiros*): The project proponent promoted the use of individual protection equipment (boots, helmet, leggings, glasses and gloves) necessary to the field activities.

Boat pilot (*voadeiras* and/or *rabetas*): The project proponent promoted the use of life jackets in the boats for all project staff and collaborators, including the pilot.

Accommodation services: No risk was identified.

Mason services: The project proponent promoted the use of the individual protection equipment (boots, helmet, gloves, etc.) necessary to the mason activities.

Cooking/kitchen services: No risk was identified.

Project proponent focal point: The project proponent promoted the use of the individual protection equipment (boots, helmet, leggings, glasses, and gloves) in the field works, according to each activity characteristics.

Forest inventory team: The project proponent promoted the use of the individual protection equipment (boots, helmet, leggings, glasses, and gloves) necessary to this kind of field.

Solar power kit installer: the risks to deal with energy sources is minimized through the hiring of qualified and experienced professionals.

Tractor operator: to minimize the risks the BRC has hired skilled professionals to do the service.

2.4 Management Capacity

2.4.1 Required Technical Skills (VCS, 3.19; CCB, G4.2)

BRC staff team has more than fifteen years of experience in AFOLU carbon project, including methodological tools, community engagement, biodiversity assessment, carbon measurement and monitoring, besides PD and MR elaboration.

The skills necessary to implement the project are related to GIS, spatial modeling, forest inventory, biomass inventory, social engagement, sustainable development projects implementation, biodiversity surveys and assessment, land use change monitoring, biodiversity monitoring, social aspects monitoring.

BRC complete team is listed and described in (APPENDIX_REQUIRED-TECHNICAL-SKILLS).

2.4.2 Management Team Experience (VCS, 3.19; CCB, G4.2)

BRC technical staff is headed exclusively by professionals with more than 10 years of experience in elaboration, implementation, monitoring, and certification of forest carbon projects. BRCarbon, operates with more than 45 professionals and technics that cover Project Management, Social, Biology, Engineering, GIS, Advocacy, and Communication areas.

BRC is also the project proponent of other grouped REDD+ projects registered in VERRA: Amazonas GPD APD (ID 4850), Cauaxi GPD AUDD (ID 4042), Uakiry GPD AUD (ID 4552), Amazônidas GPD APD (ID 4542). Also, BRC is co-proponent of two grouped ARR carbon projects: EMAS (ID 738) and Pratigi (ID1317), assuming all the technical responsibility regarding carbon aspects of these projects.

2.4.3 Project Management Partnerships/Team Development (VCS, 3.19; CCB, G4.2)

Not applicable. As described in the previous section, BRC staff has all the necessary expertise to undertake this grouped REDD+ APD project, including primary data collection, elaboration of PDs and MRs, social engagement, implementation, and monitoring of the project activities.

2.4.4 Financial Health of Implementing Organization(s) (CCB, G4.3)

BRC's financial data is sensitive and confidential information. To ensure the integrity and security of this data, it is essential that it is only shared with relevant stakeholders by signing a non-disclosure agreement. This agreement stipulates reciprocal confidentiality obligations, ensuring that such information is adequately protected and that access to it is restricted to authorized individuals only.

2.4.5 Avoidance of Corruption and Other Unethical Behavior (VCS, 3.19; CCB, G4.3)

The BRC directors are not involved in any form of corruption, which is enforceable by the company's social statue and by brCarbon's Ethics and Conduct Code (APPENDIX_ETHICS-AND-CONDUCT-CODE).

Any kind of involvement, direct or indirectly, in bribery, embezzlement, fraud, favoritism, cronyism, nepotism, extortion, and collusion are discouraged and disliked by Conduct Code and are punishable by expulsion or other measurements.

2.4.6 Commercially Sensitive Information (VCS, 3.5.2-3.5.4; CCB Program Rules, 3.5.13 – 3.5.14)

Although the PP considers the contracts between brCarbon and landowners, BRC's financial data, internal policy decisions, and commercial information as commercially sensitive, no information has been omitted from the public version of the monitoring report.

Information related to project social activity, the determination of the baseline scenario, demonstration of additionality, and estimation and monitoring of GHG emission reductions (including operational and capital expenditures) are not considered to be commercially sensitive and are provided in the public versions of the project documents.

2.5 Legal Status and Property Rights

2.5.1 National and Local Laws (VCS, 3.1, 3.6. 3.7, 3.14, 3.18, 3.19; CCB, G5.6)

The Project proponent is committed to meet all applicable Brazilian laws and applicable regulations. In this sense, BRC follows consultant lawyers to observe local laws and applicable regulations.

The following laws, statutes or regulatory frameworks are the most relevant to the project activities. The presentation order will follow the governance level, from National laws to municipality laws and other regulatory frameworks and follow chronology.

2.5.1.1 Federal legal instruments

In a wide overview of legal aspects, applied to all PAIs included in this grouped project, the project observes the principles established in the Federal Constitution, as per article 225, by contribution to ecologically well-balanced environment and article 224, paragraph 1, items (I) and (III) by contribution to conservation and restoration of essential ecological processes, while supporting the preservation of attributes beyond the legal environment requirements.

The GPD is encompassed by principles established in the National Environmental Policy - law number 6,938 from August 31st, 1981, which declares the objectives of conservation, improvement and recovery of environmental quality that is conducive to life, having among its principles the protection of ecosystems with the conservation of relevant areas (article 2, IV) and the protection of areas threatened by degradation (item IX). Another important law for the development of the project is Federal Law number 12.305, from August 2nd of 2010, that institutes the National Policy of Solid Residue.

Regarding the land use national policy, the most important regulatory framework is the Vegetation Code, law number 12,651, from May 2012. This law states not only the forest category that must be conserved inside the private properties, but also the maximum area of native vegetation that can be converted in other land uses for economic purposes.

The Brazilian Amazon APD grouped project was assembled to promote conservation in areas that in the absence of the project activities, would be legal deforested (20% of the property in Amazon biome) to accommodate commercial activities, as cattle rising and agriculture, as per the article 12 of the Vegetation Code, law 12.651.

The project is also in straight line with the Federal Law no. 12,187, of December 29th, 2009, which instituted the National Climate Change Policy, the State Law 2.308 from October 2010[1] which instituted the State System of Incentives for Environmental Services – SISA and the Incentive Program for Environmental Services - ISA Carbon, the state Law no. 1,904, of June 5th, 2007, which instituted the Ecological Economic Zoning of the State of Acre - ZEE / AC and the guidelines of the State Policy for the Valorization of Forest Environmental Assets.

The project is also in line with Law 14,119 / 2012, which defines concepts, objectives, guidelines, actions, and criteria for the implementation of the National Policy for Payment for Environmental Services (PNPSA), institutes the National Register of Payment for Environmental Services (CNPSA) and the Federal Program for Payment for Environmental Services (PFPSA) and provides on payment contracts for environmental services. Furthermore, these laws go according to the National Environmental Council / Federal Environmental Ministry resolution number 237, from 2017, that provides for environmental licensing.

According to the Law 14,119/2021 carbon sequestration is considered an ecosystem service with relevant benefits to society in terms of maintenance, recovery, or improvement of environmental conditions (Art.2, § II) and the Federal Program for Payment for Environmental Services (PFPSA) will promote actions of maintenance of areas covered by native vegetation that would be subject to suppression authorization for alternative and economic use (Art. 7, § VII).

The project is also based on the Federal Laws number 5.197, from January 3rd of 1967, that regulates fauna protection and provides other provisions, and number 9.605, from February 12nd of 1998, that provides for criminal and administrative sanctions derived from the environment's harmful conduct and activities, and other provisions.

Finally, despite not encompassing indigenous areas, or natural areas used for these people, has applied to the project area residents, the consultation free, prior, and informed consent approach (FPIC), as per the Convention no. 169 of the ILO and the United Nations Declaration on the Rights of Indigenous People. These population participated from the project assembling since its beginning, as presented in the community section.

Decree-Law number 5,452, from May 1st, 1943 – that approves the Consolidation of Labor Laws.

The National Environmental Council / Federal Environmental Ministry resolution number 237, from 2017 – that provides for environmental licensing.

Federal Law number 9,985, from 2000 – that regulates Federal Constitution’s art. 225, § 1, items I, II, III and VII, and institutes the National System of Nature Conservation Units (SNUC) and makes other provisions.

2.5.1.2 State Leal Instruments

2.5.1.2.1 Pará’s State legal instruments

Following the government attribution’s sphere, Pará’s State legal instruments are shown below.

Ordinary law number 5,887, from 1995 – that provides for the Pará's State Environmental Policy and other provisions.

Area Permanent - APP of rural properties, within the scope of State of Pará, and makes other provisions.

Ordinary Law number 7,398, from 2010 – that provides for the Ecological-Economic Zoning (ZEE) of the East Zone and Calha Norte of the State of Pará.

Decree number 2,099 of 2010 – that provides for the maintenance, restoration, conduction of natural regeneration, compensation, and composition of the Legal Reserve area of rural properties in the State of Pará and other provisions.

Normative Instruction number 06, from May 19th, 2011 – that define land use conversion procedures through authorization of Forest Suppression in the real estate and rural properties in the Legal Amazon, according to the specifications detailed below and Attachments.

Normative Instruction number 02, from July, 06th 2015 – that Provides for Authorization for Vegetation Suppression - ASV, within the scope of environmental licensing processes of the Secretary of State for the Environment and Sustainability of Pará - SEMAS/PA and gives other arrangements.

Normative Instruction number 08, from October 28th, 2015 – that defines administrative procedures for the carrying out cleaning and authorization of deletion, the be carried out in areas of secondary vegetation in an early stage of regeneration, located outside Legal Reserve and Preservation Normative Instruction number 05, from May 3rd, 2019 – SEMAS – that provides for technical procedures for elaboration, presentation, execution and evaluation Technical Sustainable Forest Management Plan (PMFS) in native forests explored or not and their forms of succession in the State of Pará and gives other arrangements.

Ordinary Law number 8,878, of 2019 – that provides for the land regularization of rural and non-rural occupations in public lands in the state of Pará, revokes Law No. 7.289, of July 24, 2009, and Decree-Law No. 57, dated August 22, 1969.

Decree No. 1,190, of 2020 – that regulates State Law No. 8,878, of July 8, 2019, to provide for land regularization in rural areas, and other measures.

Ordinary Law number 9,048, of 2020 – that establishes the State Policy on Climate Change of Pará (PEMC/PA), and other measures.

COEMA resolution number 162 of 2021 – that establishes the activities of local environmental impact, for the purposes of environmental licensing, under the competence of the Municipalities within the State of Pará, and other measures.

SEMAS/Pará Decree number 2,744, of 2022 – that provides for the Integrated Action Program for Sustainable Territories (PTS).

SEMAS/Pará Decree number 2,750, of 2022 – provides for the guidelines and procedures for preparing the State Plan for the Recovery of Native Vegetation in the State of Pará (PRVN) and creates the Working Group for the preparation of the State Plan for the Recovery of Native Vegetation in the State of Pará (GT-PRVN).

2.5.1.2.2 Amazon's State Legal Instruments

State Law number 1.532, from 1982 – regulation of the State Politics of Prevention and Control of pollution, Improvement and Environment Recuperation, and of the Natural Resources Protection.

State Law number 3.525, from 2010 - Provides the creation of the Council of Sustainable Development of People and Traditional Communities of the Amazonas State – CDSPCT/AM, in the organizational structure of the State Secretariat of the Environment and Sustainable Development.

State Law number 3.785, from 2012 - Provides for environmental licensing in the Amazon State.

State Law number 4.222, from 2015 - Institutes the State Technical Register of Potentially Polluting Activities or Users of Environmental Resources, member of the National Environmental System - SISNAMA, the Environmental Control and Inspection Fee (TCFA/AM) in accordance with Federal Law n. 6,938, of August 31, 1981, and its amendments, and gives other measures.

State Law number 4.457, 2017 – Institutes the State Policy of Solid Waste in Amazonas/AM and gives another providence.

Complementary Law number 187, from 2018 – Disciplines the execution of the article 220 of the State Constitution, that institutes the State Council of Environment of the Amazonas State (CEMAAM) and dispose of the State Fund of Environment (FEMA) and gives other measures.

Ordinance number 41.863, from 2020 - This Decree establishes norms for the execution of the State Policy on Solid Waste.

CERH-AM Normative Resolution number 001, from 2016 – The Internal Regulations of the State Council of Water Resources are instituted in the form of the Annex to this Normative Resolution.

Ordinary State Law number 5.695, from 2021 - Amends, as specified, Law No. 4,222, of October 8, 2015, which "Institutes the State Technical Register of Potentially Polluting Activities or Users of Environmental Resources, part of the National Environmental System - SISNAMA, the Control Fee and Environmental Inspection (TCFA/AM) in accordance with Federal Law No. 6938, of August 31, 1981, and its amendments, and makes other provisions", and makes other provisions.

State Law number 5.755, from 2021 - Provides the reorganization of the Council for the Sustainable Development of Traditional Peoples and Communities of the State of Amazonas, established by Law No. 3,525, of July 15, 2010, and other measures.

State Law number 5.491, from 2021 - Amends the caput of art. 12, the sole paragraph of art. 13, § 1 of art. 14 and sole paragraph of art. 15 of LAW No. 3,785, of July 24, 2012, which "Provides for environmental licensing in the State of Amazonas, Revokes Law No. 3,219, of December 28, 2007, and makes other provisions."

Ordinary State Law number 6.014, from 2022 - Institutes an administrative term, intended for analysis and decision regarding the granting or renewal of environmental licensing, in compliance with Complementary Law No. 140/2011 and CONAMA Resolution No. 237/97.

State Law number 6.052, from 2022 – Recognizes the contribution of indigenous peoples to the preservation of forests, culture, folklore, customs, legends, gastronomy, handicrafts and language.

Following the government attribution's sphere, the municipality's laws are shown below, according to each municipality.

2.5.1.3 Municipality Legal Instruments

2.5.1.3.1 Paragominas Municipality Legal Instruments

Law number 644/07, from 2007 – that Institutes the Municipality Environmental Policy and other provisions.

Law number 765/11, from 2011 – that Institutes the Municipal Environmental Code (CAM), containing the Policy and the Municipal System of Paragominas.

2.5.1.3.2 Rondon do Pará Municipality Legal Instruments

Law number 421/2002, from 2002 – that provides for the Policy for the Protection, Control, Conservation, and Environment Recovery and gives other provisions.

2.5.1.3.3 Dom Eliseu Municipality Legal Instruments

Law number 444, from 2017 – SEMMA – that Provides for the Reform of the Administrative Structure of the Municipality of Dom Eliseu, and other measures.

2.5.1.3.4 Goianésia do Pará Municipality Legal Instruments

Municipal Ordinary Law number 233, from 2009 – that provides for the Municipal Environmental Policy and the improvement of the quality of life in the Municipality of Goianésia do Pará.

2.5.1.3.5 Ulianópolis Municipality Legal Instruments

Law number 311, from 2011 – SEMMA/ Ulianópolis – Pará – That provides for the municipal environmental policy, the fund, and the municipal council for the environment, all of the municipality of Ulianópolis and makes other arrangements.

2.5.1.3.6 Ipixuna do Pará Municipality Legal Instruments

Law number 370, from 2020 – SEMMA/ Ipixuna do Pará – Pará – That establishing the new municipal environmental policy of Ipixuna do Pará and other provisions.

2.5.1.3.7 Tomé-Açu Municipality Legal Instruments

Complementary Law number 11, from 2006 – that establishes the Master Plan for Sustainable Development of the Municipality of Tomé-Açu, establishes the guidelines and norms for the physical-territorial and urban organization and takes other measures.

2.5.1.3.8 Manicoré Municipality Legal Instruments

Municipal Law number 810, from 2013 – Authorize the Municipality Executive to develop actions to implement the “Minha Casa, Minha Vida” Program (PMCMV).

Municipal Law number 828, from 2014 – Dispose about the Municipality Inspection Service (SIM) in Manicoré, establish rules and procedures of sanitary inspection in establishments that produce products of animal and vegetable origin, and gives other providence.

Municipal Law number 992, from 2022 – Dispose about the Municipal Council of Environment and Development (COMDEMA) of Manicoré and gives other providence.

Municipal Law number 995, from 2022 – Dispose about the Unique System of Social Assistance (SUAS) of Manicoré Municipality/AM and gives other providence.

Municipal Law number 817, from 2013 – Provides for the Sanitary Code of the Municipality of Manicoré, establishes sanitary infractions and corresponding penalties, defines the administrative procedures to be followed in cases of sanitary violations, and outlines the responsibilities of municipal authorities and entities in ensuring compliance with health and safety standards across the municipality.**Municipal Law number 817, from 2013 –** Dispose about the sanitary code of Manicoré Municipality, establish sanitary infractions and punishments, determinates the administrative procedures to verificate the sanitary infraction, institutes the sanitary inspections taxes, sanitary license, inspection sanitary booklet and gives other providence.

2.5.2 Relevant Laws and Regulations Related to Worker's Rights (VCS, 3.18, 3.19; CCB, G3.11)

For all project activity instances, already verified or under verification process, the Project proponent is committed to meet all applicable Brazilian laws and regulations applicable to worker rights, Furthermore, all workers have been informed about their rights before being hired, as its described in the Brazilians Labors Laws.

The following is a list of Brazil's relevant laws and regulations applicable to worker's rights:

The Brazilian Constitution, Chapter II-Social Rights, Articles 7- 11 which addressed: I) Minimum wage, ii) Normal working hours, iii) Guidance on vacation and weekly leave iv) Guidance on maternity and paternity leave v) Recognition of collective bargaining vi) Prohibition of discrimination. In addition to the Constitution, there are two additional decrees related to Brazilian labor laws.

Labor Federal Law (Consolidate of Working Laws ("CLT")): Decree-Law N. º 5.452, of May 1st of 1943. This decree gives more clarification on the subjects: i) Hourly, daily, weekly, and monthly work hours, ii) Employment of minors and women, iii) Establishes a minimum wage, iv) Worker safety and safe working environments, v) Defines penalties for employer's non-compliance, vi) Establishes a judicial work-related process for addressing all worker related issues. FEDERAL LAW Nº 5.889, June 8th of 1973 (Establishes Regular Norms for Rural Workers). This is a complementary law to the 1943 decree, once prior to 1973, rural workers did not have the same rights as urban workers. In 1973,

this law was established to specify the equality between urban and rural workers, along with compensation for overtime.

Complementary Law 123/2006 of December 14th, 2006. Establishes the National Statute of Microenterprise and Small Business; change devices of the Laws in 8,212 and 8,213, both dated July 24th, 1991, of the Consolidation of Labor Laws - CLT, approved by Decree-Law no. 5,452 of 1st of May 1943, of Law no. 10189, of February 14th of 2001, of the Complementary Law in the 63, of January 11, 1990; and revokes the Laws in the 9,317 of the 5th of December 1996, and 9841 of October 5, 1999. Art. 3 For the purposes of this Complementary Law, are considered micro-enterprises or companies small business company, simple society, the individual company of limited liability and the entrepreneur who refers to art. 966 of the Law in 10,406 of the 10th of January 2002 (Civil Code), duly registered in the Registry of Merchant Companies or in the Civil Registry of Legal Entities.

2.5.3 Human Rights (VCS, 3.19)

The BRC has its own internal policies to assure that all its collaborators follow in a properly way all the human rights requirements and more than that it is developed internally some activities not just to learn about the Human Rights, but to deepen this understanding. So, human resources sector has a schedule alongside the year that highlights the importance of respect and reception of all kinds of people, as woman, black, disable, indigenous, who are traditionally disrespected in their rights (APPENDIX_HUMAN-RESOURCES-ACTIVITIES).

Another strategy taken by the PP is its Ethic Code (APPENDIX_ETHICS-AND-CONDUCT-CODE), which describes how the collaborators, partners and contracted professionals involved in the company projects must behave in all situations, especially in terms of involvement with vulnerable people and communities.

It is important to highlight that all activities implemented or to be implemented follow the International Labor Organization Convention 169, which Brazil is one of the signatory countries, and the PP enthusiastic follows once it is a company believe that the people have to have its self-determination respected, as proposed by the ILO 169. Including, because of that, the BRC is one of the participants on the UN Global Compact effort.

2.5.4 Indigenous Peoples and Cultural Heritage (VCS, 3.18, 3.19)

This is not merely a value we uphold, as referenced in Section 2.5.3, but a fundamental practice we actively implement. A clear example of this commitment is our dedication to fostering and celebrating

Indigenous communities. On Indigenous Peoples' Day (April 19), in response to a request from the Amanayé people, who reside in the Barreirinha Indigenous Land—one of the community areas included in the project—a short film was created to honor and recognize the cultural richness and significance of their heritage and territory (see APPENDIX_INDIGENOUS-PEOPLE-DAY).

2.5.5 Recognition of Property Rights (VCS, 3.7, 3.18, 3.19; CCB, G5.1)

Table 27. Property Rights

Disputes over rights to territories and resources	At Porongaba there are bad faith squatters who claim the right to occupy and sale the land, which is pressuring the forest, once to sell the land they deforest it first.
Respect for property rights	To solve this problem the landowner has applied two different strategies. The first one is donating land to the bona fide squatters, in a way to recognize them and in counterpart they legitim the landowner rights. The second one is through accessing public power institutions and legal system to expel the bad faith squatters and land grabbers of the territory. But it is important to highlight that these actions were taken under the umbrella of Uákiry REDD+ AUDD Grouped Project, which is being developed in the same territory.

2.5.6 Benefit Sharing Mechanism (VCS, 3.18, 3.19)

Table 28. Benefit Sharing Mechanism

Summary of the benefit sharing plan	BRC's benefit sharing mechanism does not include direct monetary compensation to stakeholders. Instead, the plan involves implementing a series of activities aimed at generating positive social, economic, and environmental impacts. These activities focus on improving community livelihoods, promoting sustainable land use, and supporting local economies. The initiatives are designed to engage stakeholders in the long-term success of the project, with emphasis on creating sustainable benefits that align with local needs and conservation goals.
Benefit sharing during the monitoring period	During the monitoring period, BRC has actively implemented community engagement activities, including capacity-building workshops, support for sustainable agricultural practices, and the promotion of

	alternative livelihoods. These actions have aimed at fostering local ownership of the project objectives and ensuring that communities experience tangible, non-monetary benefits from their participation. Additionally, collaboration with public institutions and local organizations has strengthened the benefit-sharing framework and increased transparency in resource management.

2.5.7 Free, Prior, and Informed Consent (VCS, 3.18, 3.19; CCB, G5.2)

Table 29. Free, Prior, and Informed Consent

Consent	In some of project instances the project is being implemented on private lands, where there is no access by people and/or external communities, not directly affecting the lives of these people, therefore, also because there is no other type of conflict, thus, the main consent required comes directly from landowners, materialized in the signing of the conservation agreement with BRC, in accordance with Brazilian laws and guidelines.
Outcome of FPIC	Despite the nom requirement by the Brazilian law to have an FPIC, when there is no intersection of the use of land and its resources by outside population to the area, the BRC Social Engagement Protocol ensures a constant information process with local population about the project activities. Beyond that it is important to highlight that no one was displaced or relocated by the project.

Consent	In four instances (PAIs #2-5) of the project, where are people living inside the project area was held participatory workshops during 2021. The FPIC was based on free dialogical process, being talked about many themes as costs, risks and benefits of the project activities, there was guaranteed an open space to questions from the communitarians and to collect proposals activities. In this sense, after the process the project was accepted by the communitarians.
Outcome of FPIC	The population consulted has agreed with the project implementation, giving some ideas to be incorporated to the project, as the improvement of the local schools, and the access to internet. It is important highlight that an exclusive group of

	women was created to guarantee their participation and contributions.

2.5.8 Property Right Protection (VCS, 3.18, 3.19; CCB, G5.3)

Project activities have not resulted in the relocation of people, as evidenced in this document through the description of project activities and through direct observations in the field and interviews with landowners and community members.

The grouped project, as well as its instances, were idealized and designed to respect the traditional use areas of the communities. This is evidenced by the boundaries of the project area, which excluded grazing lands and adjacent forests and extended the benefits of the project beyond the project boundaries to the communities residing in the project area.

2.5.9 Identification of Illegal Activity (VCS, 3.19, CCB, G5.4)

For all project activity instances, whether already verified or under verification, the pressure for illegal deforestation is widely observed and commonly carried out in rural properties located in the Amazon, “Deforestation Arch” and in the deforestation expansion fronts. In this way, conservation activities need to avoid both planned and illegal deforestation.

Illegal activities that could impact the project are hunting, logging, and mining. The process of identifying threats and risks to the permanence of carbon stocks was done for all instances and has occurred throughout the initial analyses in a GIS environment, identifying through monitoring data sources, such as PRODES, DETER, MAPBIOMAS and remote sensing data (Landsat images, Sentinel, Google Earth) the dynamics of land use in the entire rural property and within the PAI area.

After the desk analysis, any potential illegal activities occurring within the project areas were identified in the field and registered. A mitigation plan for the illegal activities found is on the run and encompasses environmental education, training, promotion of sustainable activities for income generation, monitoring, and supervision by the competent authorities.

Therefore, for all project activity instances, short, medium, and long-term customized strategies are defined to address the risk to the carbon stocks from illegal (unplanned) activities, in a way to guarantee the benefits to the climate, community and biodiversity over the project lifetime.

Inside the Project Activities Instances no illegal activities were identified.

2.5.10 Ongoing Disputes (VCS, 3.18, 3.19; CCB, G5.5)

At Porongaba (PAI #4), there are bad-faith squatters claiming the right to occupy and sell the land, intensifying pressure on the forest. These individuals deforest the land as a first step to facilitate its sales, leading to significant environmental degradation.

The solution sought by the PP and the landowner was to propose land donation to the bona fide squatters through a negotiation and clarification of how it could occur, which has been finalized. Currently, the process has started the phase of legitimization related to the subdivision of these new lots from the original property. This step is essential to enable a comprehensive review of the property's documents and to complete the land donation process.

During this monitoring period the project proponent started planning actions for land repossession through judicial measures applicable to curb the activities of deforestation agents identified as invaders within the territory. These invaders have no legal rights to the land, whether in terms of possession or ownership. Therefore, no compensatory measures or Free, Prior, and Informed Consent (FPIC) are required, and the project complies with requirement 3.19.20 of the VCS v4.7 standard and G5.1 and G5.3 of the CCB v3.1 standard. Nonetheless, the land repossession measures implemented did not result in the relocation of the invaders during the monitoring period.

In the Potiguar (PAI #5) case, the PP has arranged meetings with the relevant stakeholders and has peacefully resolved all potential land disputes identified, and have excluded any area with potential risk from the project area.

There are no ongoing disputes within the other PAI, as mapped by the Project Proponent. These areas do not contain any communities or squatters.

3 CLIMATE

3.1 Monitoring GHG Emission Reductions and Removals

3.1.1 Data and Parameters Available at Validation (VCS, 3.16)

Data / Parameter	$AA_{planned,i,t}$
Data unit	Ha
Description	Annual area of baseline planned deforestation for stratum i in year t.
Source of data	Calculated based on VMD0006 v1.3 equation 4.
Value applied	

Instance	Stratum	AAplanned,i,t
PAI #1	As	186.00
PAI #1	Ds	92.00
PAI #2	Aa	0.00
PAI #2	Ab	404.00
PAI #3	Aa	172.00
PAI #3	Ab	322.00
PAI #4	Aa	249.00
PAI #4	Ab	249.00
PAI #5	Aa	249.00
PAI #5	Ab	249.00
PAI #6	Db	910.11
PAI #7	D	76.36
PAI #8	D	14.43
PAI #9	D	264.32
PAI #10	D	189.51
PAI #11	D	249.73
PAI #12	D	42.49
PAI #13	Ap	38.84
PAI #13	D	4.90
PAI #14	D	132.60
PAI #15	Ap	74.64
PAI #15	D	288.68

Justification of choice of data or description of measurement methods and procedures applied	Estimated based on total area of planned deforestation over the baseline period for stratum I ($A_{planned,i}$), the projected annual proportion of land that will be deforested in stratum i during year t ($D\%_{planned,i,t}$) and the Likelihood of deforestation for stratum I (L-Di) according to VMD0006 v1.3 equation 4.
Purpose of data	Calculation of baseline emissions.
Comments	-

Data / Parameter	$A_{planned,i}$
Data unit	Ha
Description	Total area of planned deforestation over the fixed baseline period for stratum i.
Source of data	Remote Sensing data.
Value applied	

Instance	Stratum	$A_{planned,i}$ (ha)
PAI #1	As	691.590
PAI #1	Ds	299.000
PAI #2	Aa	822.074
PAI #2	Ab	3905.973
PAI #3	Aa	682.461
PAI #3	Ab	3851.879
PAI #4	Aa	800.539
PAI #4	Ab	3398.773
PAI #5	Aa	1625.124
PAI #5	Ab	1,000.00
PAI #6	Db	7874.820
PAI #7	D	233.560
PAI #8	D	44.150
PAI #9	D	808.48

		PAI #10	D	579.66
		PAI #11	D	763.86
		PAI #12	D	129.95
		PAI #13	D	118.8
		PAI #13	Ap	15
		PAI #14	D	405.57
		PAI #15	D	228.31
		PAI #15	Ap	883.00
Justification of choice of data or description of measurement methods and procedures applied	Determined according to what is recognized as an immediate site-specific threat of deforestation, which, in its turn, is a function of the legal permissibility for deforestation, the suitability of the project area for conversion to alternative non-forest land use, the government approval for deforestation and a management plan for deforesting the project area. See section 3.4 of the Project Description for a complete description of measurement methods and procedures applied.			
Purpose of data	Calculation of baseline emissions.			
Comments	-			

Data / Parameter	$D\%_{planned,i,t}$
Data unit	% year-1
Description	Projected annual proportion of land that will be deforested in stratum i at year t.
Source of data	Data obtained from forestry exploration plans submitted to the environmental agency responsible for authorizing vegetation suppression in each state. Additionally, when such data are unavailable, estimates may also be derived through the analysis of proxy areas, following the guidelines established by module VMD0006 v1.3.
Value applied	The table has been omitted due to its size. Please refer to the values listed in “4. Aplanned,i,t in BSL” - 2551_MR3_CALCULUS_TABLE_INTEGRATED.xsls .

Justification of choice of data or description of measurement methods and procedures applied	Where a valid verifiable plan exists for rate at which deforestation is projected to occur, this rate must be used, according to VMD0006 v1.3, section 1.3 criteria.
Purpose of data	Determination of baseline scenario.
Comments	-

Data / Parameter	$L\text{-}D_i$
Data unit	%
Description	Likelihood of deforestation in stratum i.
Source of data	Analysis of Land Tenure.
Value applied	100%
Justification of choice of data or description of measurement methods and procedures applied	L-Di is equal to 100% for all planned deforestation areas that are not both under Government control and zoned for deforestation, according to VMD0006 v1.3, section 1.4.
Purpose of data	Determination of baseline scenario.
Comments	-

Data / Parameter	$\Delta C_{AB\_tree,i}$
Data unit	$t\ CO_2e.ha^{-1}$
Description	Baseline carbon stock change in aboveground tree biomass in stratum i; $t\ CO_2\text{-}e\ ha^{-1}$.
Source of data	Calculated based on VMD0006 v1.3 equation 6.
Value applied	

Instance	Stratum (i)	$\Delta C_{AB\_tree,i}$
PAI #1	As	456.26

	<table><tr><td></td><td>Ds</td><td>447.23</td></tr><tr><td rowspan="2">PAIs #2-5</td><td>Aa</td><td>369.94</td></tr><tr><td>Ab</td><td>402.00</td></tr><tr><td>PAI #6</td><td>Db</td><td>463.74</td></tr><tr><td rowspan="2">PAIs #7-15</td><td>D</td><td>543.65</td></tr><tr><td>Ap</td><td>306.37</td></tr></table>
Justification of choice of data or description of measurement methods and procedures applied	Estimated based on the forest carbon stock in aboveground tree biomass in stratum I ($C_{AB\_tree,bsl,i}$) and the post-deforestation carbon stock in aboveground tree biomass in stratum I ($C_{AB\_tree,post,i}$), according to VMD0006 v1.3 equation 6.
Purpose of data	Calculation of baseline emissions.
Comments	-

Data / Parameter	$\Delta C_{BB\_tree,i}$
Data unit	t $CO_2e.ha^{-1}$
Description	Baseline carbon stock change in belowground tree biomass in stratum i.
Source of data	Calculated based on VMD0006 v1.3 equation 8.
Value applied	<table><tr><th>Instance</th><th>Stratum (i)</th><th>$\Delta C_{BB\_tree,i}$</th></tr><tr><td rowspan="2">PAI #1</td><td>As</td><td>45.61</td></tr><tr><td>Ds</td><td>138.65</td></tr><tr><td rowspan="2">PAIs #2-5</td><td>Aa</td><td>36.98</td></tr><tr><td>Ab</td><td>40.19</td></tr><tr><td>PAI #6</td><td>Db</td><td>143.77</td></tr><tr><td rowspan="2">PAIs #7-15</td><td>D</td><td>168.55</td></tr><tr><td>Ap</td><td>94.99</td></tr></table>
Justification of choice of data or description of measurement methods and procedures applied	Estimated based on the forest carbon stock in aboveground tree biomass in stratum I ($C_{AB\_tree,bsl,i}$) and the post-deforestation carbon stock in aboveground tree biomass in stratum I ($C_{AB\_tree,post,i}$); according to VMD0006 v1.3 equation 8.
Purpose of data	• Calculation of baseline emissions.

Comments	-

Data / Parameter	$\Delta C_{AB\_non\text{-}tree,i}$
Data unit	t $CO_2e.ha^{-1}$
Description	Baseline carbon stock change in aboveground non-tree biomass in stratum i.
Source of data	Calculated based on VMD0006 v1.3 equation 7.
Value applied	

Instance	Stratum (i)	$\Delta C_{AB\_non\text{-}tree,i}$
PAI #1	As	33.83
	Ds	8.71
PAIs #2-5	Aa	24.60
	Ab	28.03
PAI #6	Db	9.59
PAIs #7-15	D	13.82
	Ap	1.24

Justification of choice of data or description of measurement methods and procedures applied	Estimated based on forest carbon stock in aboveground non-tree vegetation in stratum ($C_{AB\_non\text{-}tree,bsl,i}$) and Post-deforestation carbon stock in aboveground non-tree vegetation in stratum i ($_{CAB\_non\text{-}tree,post,i}$); according to VMD0006 v1.3 equation 7.
Purpose of data	Calculation of baseline emissions.
Comments	-

Data / Parameter	$\Delta C_{BB\_non\text{-}tree,i}$
Data unit	t $CO_2e.ha^{-1}$
Description	Baseline carbon stock change in belowground non-tree biomass in stratum i.
Source of data	Calculated based on VMD0006 v1.3 equation 9
Value applied	

Instance	Stratum (i)	$\Delta C_{BB\_non\text{-}tree,i}$
PAI #1	As	6.77

		Ds	1.74
	PAIs #2-5	Aa	4.92
		Ab	5.61
	PAI #6	Db	1.92
	PAIs #7-15	D	2.76
		Ap	0.25

Justification of choice of data or description of measurement methods and procedures applied	Estimated based on forest carbon stock in belowground non-tree vegetation in stratum ($C_{BB\_nontree,bsl,i}$) and post-deforestation carbon stock in belowground non-tree vegetation in stratum i ($C_{BB\_nontree,post,i}$), according to VMD0006 v1.3 equation 9.
Purpose of data	Calculation of baseline emissions.
Comments	-

Data / Parameter	$\Delta C_{DW,i}$
Data unit	t $CO_2e.ha^{-1}$
Description	Baseline carbon stock change in dead wood in stratum i.
Source of data	Calculated based on VMD0006 v1.3 equation 10.

Instance	Stratum (i)	$\Delta C_{DW,i}$
PAI #1	As	34.29
	Ds	22.40
PAIs #2-5	Aa	14.20
	Ab	8.60
PAI #6	Db	31.54
PAIs #7-15	Ap	31.74
	D	39.03

Justification of choice of data or description of measurement methods and procedures applied	Estimated based on forest carbon stock in deadwood in stratum ($C_{DW,bsl,i}$) and post-deforestation carbon stock in deadwood in stratum i ($C_{DW,post,i}$), according to VMD0006 v1.3 equation 10.
Purpose of data	Calculation of baseline emissions.
Comments	-

Data / Parameter	$\Delta C_{LI,i}$
Data unit	t $CO_2e.ha^{-1}$
Description	Baseline carbon stock change in litter in stratum i.
Source of data	Calculated based on VMD0006 v1.3 equation 11.
Value applied	

Instance	Stratum (i)	$\Delta C_{LI,i}$
PAI #1	As	19.06
	Ds	24.16
PAIs #2-5	Aa	9.49
	Ab	9.64
PAI #6	Db	24.16
PAIs #7-15	Ap	12.78
	D	13.96

Justification of choice of data or description of measurement methods and procedures applied	Estimated based on forest carbon stock in litter in stratum ($C_{LI,bsl,i}$) and post-deforestation carbon stock in litter in stratum i ($C_{LI,post,i}$), according to VMD0006 v1.3 equation 11.
Purpose of data	Calculation of baseline emissions.
Comments	-

Data / Parameter	$\Delta C_{SOC,i}$
Data unit	t $CO_2e.ha^{-1}$
Description	Baseline carbon stock change in soil organic carbon in stratum i.
Source of data	Calculated based on VMD0006 v1.3 equation 12.
Value applied	

Instance	Stratum (i)	$\Delta C_{SOC,i}$
PAI #1	As	7.56
	Ds	7.72
PAIs #2-5	Aa	12.01
	Ab	12.00

	<table><tr><td>PAI #6</td><td>Db</td><td>8.47</td></tr><tr><td rowspan="2">PAIs #7-15</td><td>D</td><td>14.70</td></tr><tr><td>Ap</td><td>14.58</td></tr></table>
Justification of choice of data or description of measurement methods and procedures applied	Estimated based on forest carbon stock in soil organic carbon in stratum ($C_{SOC,bsl,i}$) and post-deforestation carbon stock in soil organic carbon in stratum i ($C_{SOC,PD-BSL,i}$), according to VMD0006 v1.3 equation 12.
Purpose of data	Calculation of baseline emissions.
Comments	-

Data / Parameter	R
Data unit	Dimensionless
Description	Root to shoot ratio appropriate to forest type.
Source of data	Nogueira (2008).
Value applied	Dense forest = 0.31; Open or secondary forest = 0.1
Justification of choice of data or description of measurement methods and procedures applied	Eco-region-specific root to shoot ratio is used for accuracy.
Purpose of data	Calculation of baseline emissions.
Comments	-

Data / Parameter	$C_{wp,i}$
Data unit	t $CO_2e.ha^{-1}$
Description	Baseline carbon stock change in wood products in stratum i
Source of data	Calculated based on VMD0005 v1.1 equation 2
Value applied	<table><tr><th>Instance</th><th>Stratum (i)</th><th>$C_{WP,i}$</th></tr></table>

	PAI #1	As	0	
		Ds		
	PAIs #2-5	Aa	0	
		Ab		
	PAI #6	Db		
	PAIs #7-15	D		
		Ap		
Justification of choice of data or description of measurement methods and procedures applied	Estimated based on mean stock of extracted biomass carbon by class of wood product ty from stratum I ($C_{XB,ty,i}$) and the wood waste (the fraction immediately emitted through mill inefficiency by class of wood product) (WW_{ty}), according to VMD0005 v1.1 equation 2.			
Purpose of data	Calculation of baseline emissions.			
Comments	No logging activities occurred during this 3rd monitoring period.			

Data / Parameter	$C_{XB,ty,i}$
Data unit	t $CO_2e.ha^{-1}$
Description	Mean stock of extracted biomass carbon by class of wood product ty from stratum i.
Source of data	Calculated based on VMD0005 v1.1 equation 1.
Value applied	0
Justification of choice of data or description of measurement methods and procedures applied	Estimated based on volume of timber extracted from stratum i (does not include slash left onsite) by species j and wood product class ty ($V_{ex,ty,j}$), mean wood density of species j (D_j), carbon fraction (CF) and the total area of stratum (A_i), according to VMD0005 v1.1 equation 1.
Purpose of data	Calculation of baseline emissions.
Comments	No logging activities occurred during this 3rd monitoring period.

Data / Parameter	$V_{ex,ty,j}$
Data unit	m^3
Description	Volume of timber extracted from within stratum i (does not include slash left onsite) by species j and wood product class ty.
Source of data	Forest Exploration Plan (ANNEX_BASELINE-SCENARIO)
Value applied	0
Justification of choice of data or description of measurement methods and procedures applied	Estimated based on volume of timber extracted from stratum i (does not include slash left onsite) by species j and wood product class ty ($V_{ex,ty,j}$), mean wood density of species j (D_j), carbon fraction (CF) and the total area of stratum (A_i), according to VMD0005 v1.1 equation 1.
Purpose of data	Calculation of baseline emissions.
Comments	No logging activities occurred during this 3rd monitoring period.

Data / Parameter	D_j
Data unit	t d.m.m^{-3}.
Description	Mean wood density of species j.
Source of data	Reyes et al. 1992.
Value applied	0.5
Justification of choice of data or description of measurement methods and procedures applied	-
Purpose of data	Calculation of baseline emissions.

Comments	-

Data / Parameter	CF
Data unit	Dimensionless
Description	Carbon fraction
Source of data	Nogueira et al. 2008
Value applied	0.485
Justification of choice of data or description of measurement methods and procedures applied	Default factor calculated by Brazilian central Amazon.
Purpose of data	Calculation of baseline emissions.
Comments	-

Data / Parameter	SLF_{ty}
Data unit	Dimensionless
Description	Fraction of wood products that will be emitted to the atmosphere within 5 years of timber harvest by class of wood product ty.
Source of data	Brown, 1998
Value applied	0.2

Justification of choice of data or description of measurement methods and procedures applied	Default value suggested by VMD0005 v1.1.
Purpose of data	Calculation of baseline emissions.
Comments	There was no timber extraction in the 3rd monitoring period. Thus, the value does not apply.

Data / Parameter	OF_{ty}
Data unit	Dimensionless
Description	Fraction of wood products that will be emitted to the atmosphere between 5 and 100 years of timber harvest by class of wood product ty; dimensionless.
Source of data	Brown, 1998.
Value applied	0.8
Justification of choice of data or description of measurement methods and procedures applied	Default value suggested by Winjun et al., 1998.
Purpose of data	Calculation of baseline emissions.
Comments	No logging activities occurred during this 3rd monitoring period. Thus, does not apply.

Data / Parameter	$C_{WP100,i}$
Data unit	t CO_2-e ha^{-1}

Description	Carbon stock entering the wood products pool at the time of deforestation that is expected to be emitted over 100-years from stratum i.
Source of data	Calculated based on VMD0005 v1.1 equation 3.
Value applied	

Instance	Stratum (i)	$C_{WP100,i}$
PAI #1	As	0
	Ds	
PAIs #2-5	Aa	0
	Ab	0
PAI #6	Db	
PAIs #7-15	D	
	Ap	

Justification of choice of data or description of measurement methods and procedures applied	Estimated base on carbon stock entering wood products pool at time of deforestation from stratum I ($C_{WP,i}$), fraction of wood products that will be emitted to the atmosphere within 5 years of timber harvest by class of wood product ty (SLF_{ty}), and Fraction of wood products that will be emitted to the atmosphere between 5 and 100 years of timber harvest by class of wood product ty (OF_{ty}).
Purpose of data	Calculation of baseline emissions.
Comments	No logging activities occurred during this 3rd monitoring period.

Data / Parameter	$C_{AB\_tree,post,i}$
Data unit	t CO2e.ha-1
Description	Post-deforestation carbon stock in aboveground tree biomass in stratum i.
Source of data	Secondary data from peer-reviewed literature (Silva Neto et al., 2012).
Value applied	

Instance	Stratum (i)	$C_{AB\_tree,post,i}$

	PAI #1	As	0.11
		Ds	0.11
	PAIs #2-5	Aa	0.11
		Ab	0.11
	PAI #6	Db	0.11
	PAIs #7-15	D	0.11
		Ap	0.11
Justification of choice of data or description of measurement methods and procedures applied	-		
Purpose of data	Calculation of baseline emissions.		
Comments	-		

Data / Parameter	$C_{BB\_tree,post,i}$
Data unit	t $CO_2e.ha^{-1}$
Description	Post-deforestation carbon stock in belowground tree biomass in stratum i.
Source of data	Secondary data from peer-reviewed literature (Silva Neto et al., 2012).

Value applied

Instance	Stratum (i)	$C_{BB\_tree,post,i}$
PAI #1	As	0.02
	Ds	0.02
PAIs #2-5	Aa	0.02
	Ab	0.02
PAI #6	Db	0.02
PAIs #7-15	D	0.02
	Ap	0.02

Justification of choice of data or description of measurement methods and procedures applied	-
Purpose of data	Calculation of baseline emissions
Comments	-

Data / Parameter	$C_{AB\_non\text{-}tree,post,i}$
Data unit	t $CO_2e.ha^{-1}$
Description	Post-deforestation carbon stock in aboveground non-tree biomass in stratum i.
Source of data	Secondary data from peer-reviewed literature (Silva Neto et al., 2012).
Value applied	

Instance	Stratum (i)	$C_{AB\_non\text{-}tree,post,i}$
PAI #1	As	15.00
	Ds	15.00
PAIs #2-5	Aa	15.00
	Ab	15.00
PAI #6	Db	15.00
PAIs #7-15	D	15.00
	Ap	15.00

Justification of choice of data or description of measurement methods and procedures applied	-
Purpose of data	Calculation of baseline emissions.
Comments	

Data / Parameter	$C_{BB\_non\text{-}tree,post,i}$
Data unit	t $CO_2e.ha^{-1}$
Description	Post-deforestation carbon stock in belowground non-tree biomass in stratum i.
Source of data	Secondary data from peer-reviewed literature (Silva Neto et al., 2012).
Value applied	

Instance	Stratum (i)	$C_{BB\_non\text{-}tree,post,i}$
PAI #1	As	3.00
	Ds	3.00
PAIs #2-5	Aa	3.00
	Ab	3.00
PAI #6	Db	3.00
PAIs #7-15	D	3.00
	Ap	3.00

Justification of choice of data or description of measurement methods and procedures applied	-
Purpose of data	Calculation of baseline emissions
Comments	-

Data / Parameter	$C_{DW,post,i}$
Data unit	t $CO_2e.ha^{-1}$
Description	Post-deforestation carbon stock in dead wood in stratum i.
Source of data	-
Value applied	0

Justification of choice of data or description of measurement methods and procedures applied	Post-deforestation carbon stock in deadwood (CDW,post,i) is set as zero as the project area is expected to be systematically burned every year in the baseline scenario.
Purpose of data	Calculation of baseline emissions
Comments	-

Data / Parameter	$C_{LI,post,i}$
Data unit	t $CO_2e.ha^{-1}$
Description	Post-deforestation carbon stock in litter in stratum i.
Source of data	-
Value applied	0
Justification of choice of data or description of measurement methods and procedures applied	-
Purpose of data	Calculation of baseline emissions
Comments	-

Data / Parameter	$C_{SOC,PD-BSL,i}$
Data unit	t CO2-e ha-1
Description	Mean post-deforestation stock in soil organic carbon in the post deforestation stratum i

Source of data	See the values applied in 2551_MR3_CALCULUS_TABLE_INTEGRATED.xsls
Value applied	

Instance	Stratum (i)	$C_{SOC,PD-BSL,i}$
PAI #1	As	68.02
	Ds	69.48
PAIs #2-5	Aa	108.10
	Ab	108.00
PAI #6	Db	76.25
PAIs #7-15	Ap	131.22
	D	132.28

Justification of choice of data or description of measurement methods and procedures applied	Calculated from mean carbon stock in soil organic carbon for stratum I ($C_{SOC,i,t}$=0), land use factor before conversion (FLU), management factor before conversion (FMG) and input factor before, according to VMD0004 v1.0, equation 3. (de Oliveira, D. C., Maia, S. M. F., Freitas, R. D. C. A., & Cerri, C. E. P. 2022))
Purpose of data	Calculation of baseline emissions.
Comments	-

Data / Parameter	$GHG_{BSL-E,i,t}$
Data unit	t CO2e.yr-1
Description	Greenhouse gas emissions as a result of deforestation activities within the project boundary in the baseline stratum i in year t.
Source of data	Calculated based on VMD0006 v1.3 equation 15.
Value applied	See the values applied in 2551_MR3_CALCULUS_TABLE_INTEGRATED.xlsx in “8. Planned GHG emissions - BSL” spreadsheet.

Instance	Stratum	Aburn,i,t
#01	**As**	186.00
#01	**Ds**	92.00
#02	**Aa**	0.00
#02	**Ab**	404.00

	#03	Aa	172.00
	#03	Ab	322.00
	#04	Aa	249.00
	#04	Ab	249.00
	#05	Aa	249.00
	#05	Ab	249.00
	#06	Db	910.11
	#07	D	76.36
	#08	D	14.43
	#09	D	264.32
	#10	D	189.51
	#11	D	249.73
	#12	D	42.49
	#13	Ap	4.90
	#13	D	38.84
	#14	D	132.60
	#15	Ap	288.68
	#15	D	74.64
	GHGBSL,E		141,013.53

Justification of choice of data or description of measurement methods and procedures applied	Calculated based on the non-CO2 emissions due to biomass burning in stratum i in year t (EBiomassBurn,i,t), according to VMD0006 v1.3 equation 15.
Purpose of data	Calculation of baseline emissions.
Comments	Net CO2e emission from fossil fuel combustion in stratum i in year t (EFC,i,t) and direct N2O emission as a result of nitrogen application on the alternative land use within the project boundary in stratum i in year t (N2Odirect-N,i,t) are conservatively excluded from the project scope and the calculation of the baseline estimates following VM0007 v1.6 section 5.4 criteria.

Data / Parameter	$E_{BiomassBurn,i,t}$
Data unit	t CO_2e

Description	Greenhouse gas emissions due to biomass burning in stratum i in year t of each GHG (CO2, CH4, N2O).
Source of data	Calculated based on VMD0013 v1.3 equation 1.
Value applied	The table has been omitted due to its size. Please refer to the values listed in 2551_MR3_CALCULUS_TABLE_INTEGRATED.xlsx
Justification of choice of data or description of measurement methods and procedures applied	Calculated based on area burnt for stratum i in year t ($A_{burn,i,t}$), average aboveground biomass stock before burning stratum i, in year t ($B_{i,t}$), combustion factor for stratum i (unitless) ($COMF_i$), emission factor for stratum i for gas g ($Gg_{,i}$) and the Global warming potential for gas g (GWP_g), according to VMD0013 v1.3 equation 1. .
Purpose of data	Calculation of baseline emissions.
Comments	-

Data / Parameter	$A_{burn,i,t}$
Data unit	Ha
Description	Area burnt for stratum i in year t.
Source of data	Equal to $AA_{planned,i,t}$ in the baseline case.
Value applied	

Stratum (i)	Aburn,i,t
As	186.00
Ds	92.00
Aa	670.00
Ab	1,224.00
D	1,082.92
Ap	293.59
Db	910.11

Justification of choice of data or description of measurement methods and procedures applied	For the calculation of baseline emissions, the burned area is considered equivalent to the annual deforested area, assuming that all deforestation is preceded by a fire to clear the land in the baseline case.
Purpose of data	Calculation of baseline emissions.
Comments	-

Data / Parameter	Bi,t
Data unit	tonnes d.m. ha^{-1}
Description	Average aboveground biomass stock before burning for stratum i, year t.
Source of data	Calculated based on VMD0013 v1.3 equation 2.
Value applied	The table has been omitted due to its size. Please see the values applied in 2551_MR3_CALCULUS_TABLE_INTEGRATED.xlsx
Justification of choice of data or description of measurement methods and procedures applied	Calculated based on carbon stock in aboveground biomass in trees in stratum i in year t ($C_{AB\_tree,i,t}$), Carbon stock in dead wood for stratum i in year t ($C_{DWi,t}$), Carbon stock in litter for stratum i in year t ($C_{LI,i,t}$) and Carbon fraction of biomass (CF), according to VMD0013 v1.3 equation 2.
Purpose of data	Calculation of baseline emissions.
Comments	-

Data / Parameter	$COMF_i$
Data unit	Dimensionless
Description	Combustion factor for stratum i .

Source of data	IPCC (2019)
Value applied	0.45
Justification of choice of data or description of measurement methods and procedures applied	Default values in Table 2.6 of IPCC, 2019.
Purpose of data	Calculation of baseline emissions.
Comments	The combustion factor is a measure of the proportion of the fuel that is actually combusted, which varies as a function of the size and architecture of the fuel load (i.e., a smaller proportion of large, coarse fuel such as tree stems will be burnt compared to fine fuels, such as grass leaves), the moisture content of the fuel and the type of fire (i.e., intensity and rate of spread).

Data / Parameter	$Gg_{,i}$
Data unit	kg t^{-1} d.m. burnt
Description	Emission factor for stratum i for gas g
Source of data	IPCC (2019)
Value applied	CH4=6.8; N2O=0.2
Justification of choice of data or description of measurement methods and procedures applied	Default values in Table 2.6 of IPCC, 2019
Purpose of data	Calculation of baseline emissions.
Comments	Defaults can be found in Volume 4, Chapter 2, of the IPCC 2019 Inventory Guidelines in table 2.5 (see 2551_MR3_CALCULUS_TABLE_INTEGRATED.xlsx).

Data / Parameter	GWP_g
Data unit	Dimensionless
Description	Global warming potential for gas g.
Source of data	Fifth Assessment Report (AR5) IPCC (2019)
Value applied	CH4=28; N2O=265
Justification of choice of data or description of measurement methods and procedures applied	Default factor from the latest IPCC Assessment Report.
Purpose of data	Calculation of baseline emissions.
Comments	-

Data / Parameter	$\Delta C_{BSL,i,t}$
Data unit	t CO_2e
Description	Net carbon stock changes in all pools in the baseline stratum i in year t.
Source of data	Calculated based on VMD0006 v1.3 equation 4.
Value applied	See the values applied in

ance	Stratum	AAplanned,i,t	Aplanned,t	D%planned,i,t	D%planne data sour
#1	As	186.00	691.59	26.9%	ASV (Autorização de Supressão Vegetal)

PAI #1	Ds	92.00	299.00	30.8%	ASV
PAI #2	Aa	0.00	822.07	0.0%	ASV
PAI #2	Ab	404.00	3217.93	10.3%	ASV
PAI #3	Aa	172.00	682.46	25.2%	ASV
PAI #3	Ab	322.00	3851.88	8.4%	ASV
PAI #4	Aa	249.00	800.54	31.1%	ASV
PAI #4	Ab	249.00	3398.77	7.3%	ASV
PAI #5	Aa	249.00	1625.12	15.3%	ASV
PAI #5	Ab	249.00	2587.92	9.6%	ASV
PAI #6	Db	910.11	7874.82	11.6%	Proxy areas
PAI #7	D	76.36	233.56	32.7%	Proxy areas
PAI #8	D	14.43	44.15	32.7%	Proxy areas
PAI #9	D	264.32	808.48	32.7%	Proxy areas
PAI #10	D	189.51	579.66	32.7%	Proxy areas
PAI #11	D	249.73	763.86	32.7%	Proxy areas
PAI #12	D	42.49	129.95	32.7%	Proxy areas
PAI #13	D	38.84	118.80	32.7%	Proxy areas
PAI #13	Ap	4.90	15.00	32.7%	Proxy areas
PAI #14	D	132.60	405.57	32.7%	Proxy areas
PAI #15	D	74.64	228.31	32.7%	Proxy areas
PAI #15	Ap	288.68	883.00	32.7%	Proxy areas

Table 34***Error! Reference source not found.Error! Reference source not found.*** 2551_MR3_CALCULUS_TABLE_INTEGRATED.xlsx

Justification of choice of data or description of measurement methods and procedures applied	Estimated based on the annual area of baseline planned deforestation for stratum i in year t ($AA_{planned,i,t}$), the baseline carbon stock change in aboveground tree biomass in stratum I ($\Delta C_{AB\_tree,i}$), the baseline carbon stock change in belowground tree biomass in stratum I ($\Delta C_{BB\_tree,i}$), the baseline carbon stock change in aboveground non-tree biomass in stratum ($\Delta C_{AB\_non-tree,i}$), the baseline carbon stock change in belowground non-tree biomass in stratum I ($\Delta C_{BB\_non-tree,i}$), the baseline carbon stock change in wood products in stratum I ($\Delta C_{WP,i}$), the baseline carbon stock change in dead wood in stratum I ($\Delta C_{DW,i}$), the baseline carbon stock change in litter in stratum I ($\Delta C_{LI,i}$) and the baseline carbon stock change in soil organic carbon in stratum I, according to VMD0006 v1.3 equation 4.
Purpose of data	Calculation of baseline emissions.
Comments	-

Data / Parameter	$\Delta C_{BSL,planned}$
Data unit	t CO_2e
Description	Net greenhouse gas emissions in the baseline from planned deforestation.
Source of data	Calculated based on VMD0006 v1.3 equation 1.
Value applied	

Instance	ΔC_{BSL} planned
	Year
	2023
PAI #1	157,851
PAI #2	196,476
PAI #3	233,911
PAI #4	232,984
PAI #5	232,984
PAI #6	548,372
PAI #7	49,967
PAI #8	9,445
PAI #9	172,963
PAI #10	119,720
PAI #11	157,764
PAI #12	26,839

	PAI #13: 27,556 PAI #14: 83,764 PAI #15: 224,931 Total: 2,524,892
Justification of choice of data or description of measurement methods and procedures applied	Estimated based on the net carbon stock changes in all pools in the baseline ($\Delta C_{BSL,i,t}$) and GHG emissions as a result of deforestation activities within the project boundary in the baseline stratum i in year t ($GHG_{BSL-E,i,t}$), according to equation 1 from VMD0006 v1.3.
Purpose of data	Calculation of baseline emissions.
Comments	-

3.1.2 Data and Parameters Monitored (VCS, 3.16)

Data / Parameter	$A_{DefPA,i,u,t}$
Data unit	Ha
Description	Area of recorded deforestation in the project area in stratum I converted to land use u in year t.
Source of data	Remote sensing imagery (Sentinel 2, Landsat 8), PRODES and DETER database.
Description of measurement methods and procedures to be applied	Annual deforestation is measured in GIS using remote sensing techniques and reported with spatial explicit data by raster and shapefile. evidence.
Frequency of monitoring/recording	Annual
Value monitored	Stratum (i) / ADefPA,i,u,t As: 0 Ds: 0 Aa: 20.17 Ab: 17.96 D: 0

	Ap: 0 Db: 8.98
Monitoring equipment	Landsat 8 OLI, Sentinel MSI
QA/QC procedures to be applied	The accuracy assessment of the deforestation database classification (PRODES/DETER) was conducted using a set of 200 points randomly distributed across the properties. Each point was classified as forest or non-forest based on PRODES/DETER data and visual analysis of Planet and Sentinel-2 satellite images. Comparing these results, an overall accuracy of 96% for the PRODES/DETER data was concluded.
Purpose of the data	Calculation of project emissions
Calculation method	Classified images with information about the area of annual deforestation in Brazil are downloaded from PRODES websites and clipped with the project area spatial limits. Images from Sentinel are downloaded from ESA.
Comments	-

Data / Parameter	$C_{P,post,u,i}$
Data unit	t CO_2-e
Description	Carbon stock in all pools in post-deforestation land use u in stratum i.
Source of data	Calculated according to VMD0015 v2.2, equation 06
Description of measurement methods and procedures to be applied	Calculated based on carbon stock in aboveground tree biomass in stratum I ($C_{AB\_tree,i}$), carbon stock in belowground tree biomass in stratum I ($C_{BB\_tree,i}$), carbon stock in aboveground non-tree vegetation in stratum ($C_{AB\_non-tree,i}$), carbon stock in belowground non-tree vegetation in stratum I ($C_{BB\_non-tree,i}$), carbon stock in dead wood in stratum I ($C_{DW,i}$), carbon stock in litter in stratum I (CLI,i), mean post-deforestation stock in soil organic carbon in the post deforestation stratum I ($_{CSOC,PD-BSL,i}$), according to VMD0015 v2.2, equation 06.
Frequency of monitoring/recording	10 years (in each baseline revalidation)

Value monitored	<table><tr><th>Instance</th><th>Stratum (i)</th><th>$C_{P,post,u,i}$</th></tr><tr><td rowspan="2">PAI #1</td><td>As</td><td>86.15</td></tr><tr><td>Ds</td><td>87.61</td></tr><tr><td rowspan="2">PAIs #2-5</td><td>Aa</td><td>126.23</td></tr><tr><td>Ab</td><td>126.12</td></tr><tr><td>PAI #6</td><td>Db</td><td>94.38</td></tr><tr><td rowspan="2">PAIs #7-15</td><td>Ap</td><td>149.35</td></tr><tr><td>D</td><td>150.41</td></tr></table>
Monitoring equipment	N/A
QA/QC procedures to be applied	-
Purpose of the data	Calculation of project emissions
Calculation method	See VMD0015 v2.2, equation 05.
Comments	-

Data / Parameter	$C_{WP,i}$
Data unit	t CO_2-e ha^{-1}
Description	Carbon stock sequestered in wood products from harvests in stratum i
Source of data	Post exploratory reports
Description of measurement methods and procedures to be applied	See section 4.1.2.8.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value monitored	Ex-ante: 0 Ex-post: 0
Monitoring equipment	-
QA/QC procedures to be applied	-

Purpose of the data	Calculation of project emissions
Calculation method	See VMD0015 v2.2, equation 05.
Comments	No logging activities occurred during this 3rd monitoring period. Thus, does not apply.

Data / Parameter	$\Delta C_{pools,Def,u,i,t}$
Data unit	t CO2-e
Description	Net carbon stock changes in all pools as a result of deforestation in the project case in land use u in stratum i at time t.
Source of data	Calculated according to VMD0015 v2.2, equation 05.
Description of measurement methods and procedures to be applied	Calculated based on carbon stock in all pools in the baseline case in stratum I ($C_{BSL,i}$), carbon stock in all pools in post-deforestation land use u in stratum I ($C_{P,post,u,i}$) and carbon stock sequestered in wood products from harvests in stratum I ($C_{WP,i}$), according to VMD0015 v2.2, equation 05.
Frequency of monitoring/recording	10 years (in each baseline revalidation)
Value monitored	
Monitoring equipment	N/A
QA/QC procedures to be applied	-
Purpose of the data	Calculation of project emissions
Calculation method	See VMD0015 v2.2, equation 05.

Instance	Stratum (i)	$\Delta C_{pools,Def,u,i,t}$
PAI #1	As	603.38
	Ds	650.62
PAIs #2-5	Aa	472.14
	Ab	506.06
PAI #6	Db	683.19
PAIs #7-15	Ap	796.47
	D	461.95

Comments	-

Data / Parameter	$\Delta C_{P,DefPA,i,t}$
Data unit	t CO_2-e
Description	Net carbon stock change as a result of deforestation in the project case in the project area in stratum i at time t.
Source of data	Calculated according to VMD0015 v2.2, equation 03
Description of measurement methods and procedures to be applied	Calculated based on the area of recorded deforestation in the project area stratum i converted to land use u at time t ($A_{DefPA,u,i,t}$) and the net carbon stock changes in all pools in the project case in land use u in stratum i at time t ($\Delta C_{pools,Def,u,i,t}$), according to VMD0015 v2.2, equation 03.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value monitored	
Monitoring equipment	-
QA/QC procedures to be applied	-

Year		2023
$\Delta C_{P,DefPA,i,t}$	**PAI #1**	-
	PAI #2	1,473.90
	PAI #3	2,384.32
	PAI #4	18,698.63
	PAI #5	599.62
	PAI #6	-
	PAI #7	-
	PAI #8	-
	PAI #9	-
	PAI #10	-
	PA I#11	-
	PAI #12	-
	PAI #13	-
	PAI #14	-
	PAI #15	-
$\Delta C_{P,DefPA,i,t}$	**Total**	**23,156.47**

Purpose of the data	Calculation of project emissions
Calculation method	See VMD0015 v2.2, equation 03.
Comments	-

Data / Parameter	$A_{DegW,i}$
Data unit	ha
Description	Area potentially impacted by degradation processes in stratum i
Source of data	Measured
Description of measurement methods and procedures to be applied	The area subject to degradation is delineated based on an access buffer from all access points, such as roads and rivers or previously cleared areas, to the project area, with a width equal to the distance of degradation penetration.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value monitored	

Instance	Stratum (i)	$A_{DegW,i}$
PAI #1	As	-
	Ds	-
PAI #2	Aa	365.02
	Ab	206.55
PAI #3	Aa	318.51
	Ab	21.93
PAI #4	Aa	599.91
	Ab	1,583.59
PAI #5	Aa	605.85
	Ab	15.80
PAI #6	Db	-
PAI #7	Ap	-
	D	-
PAI #8	Ap	-
	D	-
PAI #9	Ap	-
	D	-
PAI #10	Ap	-

			D	-
		PAI #11	Ap	-
			D	-
		PAI #12	Ap	-
			D	-
		PAI #13	Ap	-
			D	-
		PAI #14	Ap	-
			D	-
		PAI #15	Ap	-
			D	-
Monitoring equipment	DETER data, Remote Sensing data (Sentinel), GIS software's and field survey.			
QA/QC procedures to be applied	Orbital imaging steps will be supervised by a professional with more than ten years of experience remote sensing in tropical forests. In addition, field survey will be adopted to effect and guarantee quality imaging at extremely high spatial resolution. All Digital Image Processing (PDI) steps will be internally rechecked. The orbital imaging results will be compared with data collected in the field for validation, where such quality assurance and control procedures will be led by forest inventory specialists from the BRC team (see APPENDIX_CARBON-POOLS).			
Purpose of the data	Calculation of project emissions			
Calculation method	See VMD0015 v2.2, equation 08.			
Comments	Ex-ante estimates of net carbon stock changes as a result of degradation in stratum i in the project area in year t ($\Delta C_{P,DegW,i,t}$) were made based on participatory rural appraisals (PRA), though the number of families and the average consumption of wood.			

Data / Parameter	$C_{DegW,i,t}$
Data unit	t CO_2-e.ha^{-1}
Description	Biomass carbon of trees cut and removed through degradation process from plots measured in stratum i in year t.

Source of data	Estimated through diameter of stumps directly measured in the field.
Description of measurement methods and procedures to be applied	The diameter of all tree stumps is measured and conservatively assumed to be the same as the DBH. The above and below ground carbon stock of each harvested tree are estimated using the same allometric regression equation and root to shoot ratio used for estimating the carbon pool in trees in the baseline scenario
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value monitored	

Instance	Stratum (i)	$C_{DegW,i,t}$
PAI #1	As	-
	Ds	-
PAI #2	Aa	83.78
	Ab	-
PAI #3	Aa	15.21
	Ab	16.85
PAI #4	Aa	14.90
	Ab	21.99
PAI #5	Aa	-
	Ab	-
PAI #6	Db	-
PAI #7	Ap	-
	D	-
PAI #8	Ap	-
	D	-
PAI #9	Ap	-
	D	-
PAI #10	Ap	-
	D	-
PAI #11	Ap	-
	D	-
PAI #12	Ap	-
	D	-
PAI #13	Ap	-
	D	-
PAI #14	Ap	-
	D	-
PAI #15	Ap	-
	D	-

Monitoring equipment	Diameter tape.
QA/QC procedures to be applied	See SOP for biomass inventory (APPENDIX_CARBON-POOLS).
Purpose of the data	Calculation of project emissions.
Calculation method	Calculated through allometric equation used for estimating the carbon pool in trees in the baseline scenario.
Comments	Ex-ante estimates were made based on PRAs, which considered the amount of wood used for firewood, construction of houses and boats per family.

Data / Parameter	AP_i
Data unit	ha
Description	Total area of degradation sample plots in stratum i.
Source of data	Ground measurement.
Description of measurement methods and procedures to be applied	Sampling plots covering 3% of A_{degWi}
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value monitored	Ex-ante: 56.52 Ex-post: 56.52
Monitoring equipment	Tape measure, GPS.
QA/QC procedures to be applied	See SOP for biomass inventory (APPENDIX_CARBON-POOLS).
Purpose of the data	Calculation of project emissions.
Calculation method	Fixed area plots covering 3% of the $A_{DegW,I}$ in the monitoring period.

Comments	The area of sample plots for degradation through extraction trees for illegal timber is supposed to be the same Ex-ante and Ex-post.

Data / Parameter	$\Delta C_{P,DegW,i,t}$
Data unit	t CO_2-e
Description	Net carbon stock changes as a result of degradation in stratum i in the project area in year t.
Source of data	Calculated according to VMD0015 v2.2, equation 08.
Description of measurement methods and procedures to be applied	Calculated based on area potentially impacted by degradation processes in stratum I ($A_{DegW,i}$) and biomass carbon of trees cut and removed through degradation process from plots measured in stratum i in year t ($C_{DegW,i,t}$) and total area of degradation sample plots in stratum I (AP_i), according to VMD0015 v2.2, equation 08.
Frequency of monitoring/recording	Annual

Value monitored

Year	Instance	Stratum (i)	$\Delta C_{P,DegW,i,t}$
2023	PAI #1	As	-
		Ds	-
	PAI #2	Aa	4,325.59
		Ab	-
	PAI #3	Aa	945.25
		Ab	378.58
	PAI #4	Aa	1,724.45
		Ab	2,235.96
	PAI #5	Aa	-
		Ab	-
	PAI #6	Db	-
	PAI #7	Ap	-
		D	-
	PAI #8	Ap	-
		D	-
	PAI #9	Ap	-
		D	-
	PAI #10	Ap	-
		D	-
	PAI #11	Ap	-

			D	-
		PAI #12	Ap	-
			D	-
		PAI #13	Ap	-
			D	-
		PAI #14	Ap	-
			D	-
		PAI #15	Ap	-
			D	-

Monitoring equipment	N/A
QA/QC procedures to be applied	-
Purpose of the data	Calculation of project emissions
Calculation method	See VMD0015 v2.2, equation 08.
Comments	-

Data / Parameter	$\Delta C_{P,SelLog,i,t}$
Data unit	t CO_2-e
Description	Net carbon stock change as a result of degradation through selective logging of FSC certified forest management areas in the project area in the project case in stratum i in year t.
Source of data	Calculated according to VMD0015 v2.2, equation 09.
Description of measurement methods and procedures to be applied	Calculated based on actual net project emissions arising in the logging gap in stratum i in year t ($C_{LG,i,t}$), actual net project emissions arising from logging infrastructure in stratum i in year t ($C_{LR,i,t}$) and the carbon stock in wood products pool from stratum i, in year t ($C_{WPi,t}$), according to VMD0015 v2.2, equation 09.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value monitored	Ex-post: 0
Monitoring equipment	N/A

QA/QC procedures to be applied	-
Purpose of the data	Calculation of project emissions
Calculation method	See section 4.2
Comments	No logging activities occurred during this 3rd monitoring period.

Data / Parameter	$C_{LG,i,t}$
Data unit	t CO_2-e
Description	Actual net project emissions arising in the logging gap, in stratum i in year t;
Source of data	Calculated according to VMD0015 v2.2, equation 10
Description of measurement methods and procedures to be applied	Calculated based on biomass carbon stock of timber extracted within the project boundary for logging stratum z, in stratum i in year t ($_{CEXT, z,i,t}$), logging damage factor for logging stratum z, in stratum I ($L_{DFz,i}$) and volume extracted from logging stratum z, in stratum i in year t ($V_{EXT,z,i,t}$), according to VMD0015 v2.2, equation 10.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value monitored	Ex-post: 0
Monitoring equipment	N/A
QA/QC procedures to be applied	-
Purpose of the data	Calculation of project emissions.
Calculation method	See VMD0015 v2.2, equation 10 at section 4.2.
Comments	No logging activities occurred during this 3rd monitoring period. Thus, does not apply.

Data / Parameter	$C_{EXT,z,i,t}$
Data unit	t CO2-e
Description	Biomass carbon stock of timber extracted within the project boundary for logging stratum z, in stratum i in year t.
Source of data	Calculated according to VMD0015 v2.2, equation 11.
Description of measurement methods and procedures to be applied	Calculated based on the volume of timber extracted of species j for logging stratum z, in stratum i in year t ($V_{EXT,j,z,i,t}$), the basic wood density of species j (D_j) and the carbon fraction of biomass (CF), according to VMD0015 v2.2, equation 11.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value monitored	Ex-post: 0
Monitoring equipment	N/A
QA/QC procedures to be applied	-
Purpose of the data	Calculation of project emissions.
Calculation method	The volume of timber extracted of all species is taken from annual operating plan. Basic wood density of all species is taken from the tropical wood density database. Carbon fraction of biomass for tree species is default according to IPCC (2019). See VMD0015 v2.2, equation 11 at section 4.2.
Comments	No logging activities occurred during this 3rd monitoring period. Thus, does not apply.

Data / Parameter	$LDF_{z,i}$
Data unit	t C m^{-3}
Description	Logging damage factor for logging stratum z, in stratum i
Source of data	VMD0015 v2.2

Description of measurement methods and procedures to be applied	Default data
Frequency of monitoring/recording	-
Value monitored	0.67
Monitoring equipment	-
QA/QC procedures to be applied	-
Purpose of the data	Calculation of project emissions.
Calculation method	-
Comments	No logging activities occurred during this 3rd monitoring period.

Data / Parameter	$V_{EXT,z,i,t}$
Data unit	m^3
Description	Volume extracted from logging stratum z, in stratum i in year t.
Source of data	Post exploration reports.
Description of measurement methods and procedures to be applied	-
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value monitored	Year: 2023 — VEXT,z,i,t: 0
Monitoring equipment	-
QA/QC procedures to be applied	-

Purpose of the data	Calculation of project emissions.
Calculation method	-
Comments	No logging activities occurred during this 3rd monitoring period.

Data / Parameter	$C_{LR,i,t}$
Data unit	t CO_2-e
Description	Actual net project emissions arising from logging infrastructure in stratum i in year t.
Source of data	Calculated according to VMD0015 v2.2, equation 12.
Description of measurement methods and procedures to be applied	Calculated based on change in carbon stock resulting from skid trail creation in stratum i in year t ($\Delta C_{SKID,i,t}$), Change in carbon stock resulting from logging road creation in stratum i in year ($\Delta C_{ROAD,i,t}$) and the Change in carbon stock resulting from logging deck creation in stratum i in year t ($\Delta C_{DECKS,i,t}$), according to VMD0015 v2.2, equation 12
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value monitored	Ex-ante: 0 Ex-post: 0
Monitoring equipment	N/A
QA/QC procedures to be applied	-
Purpose of the data	Calculation of project emissions.
Calculation method	See VMD0015 v2.2, equation 12 at section 4.2.
Comments	No logging activities occurred during this 3rd monitoring period. Thus, does not apply.

Data / Parameter	$\Delta C_{SKID,i,t}$

Data unit	t CO_2-e
Description	Change in carbon stock resulting from skid trail creation in stratum i in year t.
Source of data	Calculated according to VMD0015 v2.2, equation 13.
Description of measurement methods and procedures to be applied	Calculated based on the Length of skid trails in stratum i in year t ($L_{SKID,i,t}$) and the Skid trail emissions factor (Average emissions resulting from dead wood created in the process of skid trail creation per length of skid trail) in stratum I (SK_i), based on VMD0015 v2.2, equation 13.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value monitored	Ex-post: 0
Monitoring equipment	N/A
QA/QC procedures to be applied	-
Purpose of the data	Calculation of project emissions
Calculation method	The length of skid trails is taken from forest exploration maps. These maps contain information about all felled trees, primary, secondary and skid trails. Skid trail emissions factor is calculated according to VMD0015 v2.2, equations 14. See VMD0015 v2.2, equation 13 and 14 at section 4.2.
Comments	No logging activities occurred during this 3rd monitoring period. Thus, does not apply.

Data / Parameter	$L_{SKID,i,t}$
Data unit	m
Description	Length of skid trails in stratum i in year t.
Source of data	Forest exploration maps and associated GIS files.

Description of measurement methods and procedures to be applied	Measured in GIS.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value monitored	Ex-post: 0
Monitoring equipment	N/A
QA/QC procedures to be applied	-
Purpose of the data	Calculation of project emissions.
Calculation method	-
Comments	Forest exploration maps contain information about all felled trees, primary and secondary roads, and skid trails. No logging activities occurred during this 3rd monitoring period. Thus, does not apply.

Data / Parameter	$SK_{,i}$
Data unit	t CO^2-e.m^{-1}
Description	Skid trail emission factor (Average emissions resulting from dead wood created in the process of skid trail creation per length of skid trail) in stratum i.
Source of data	Calculated according to VMD0015 v2.2, equation 14
Description of measurement methods and procedures to be applied	Calculated based on mean live carbon stock of trees and non-tree biomass assumed to be killed per unit area in creation of skid trail in stratum I ($C_{dest,\ i}$), the carbon stock change in organic carbon resulting from skid trail creation in stratum I ($\Delta C_{SOC\_sk,i}$) and the Mean width of skid trails in stratum I (W_{SKID}) according to VMD0015 v2.2, equation 14.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.

Value monitored	Ex-post: 0
Monitoring equipment	-
QA/QC procedures to be applied	N/A
Purpose of the data	Calculation of project emissions
Calculation method	-
Comments	Mean live carbon stock of trees and non-tree biomass assumed to be killed is calculated taking in consideration the average carbon stock of trees below the maximum diameter tree that can be within the path of a skid trail, following VMD0015 v2.2, step 02 criteria, and equation 15. Mean width of skid trails is determined in function of the machinery used at the project site. This value will vary among PAIs. See VMD0015 v2.2, equation 14 and 15 at section 4.2. No logging activities occurred during this 3rd monitoring period, thus does not apply.

Data / Parameter	$C_{dest,\ i}$
Data unit	t CO2-e
Description	Mean live carbon stock of trees and non-tree biomass assumed to be killed per unit area in creation of skid trail in stratum i.
Source of data	Calculated according to VMD0015 v2.2, equation 15.
Description of measurement methods and procedures to be applied	Calculated based on Carbon stock in aboveground tree biomass assumed to be killed per unit area resulting from the creation of the skid trail in stratum I ($C_{AB\_tree\_dest,i}$), carbon stock in belowground tree biomass assumed to be killed per unit area resulting from the creation of the skid trail in stratum I ($C_{BB\_tree\_dest,i}$), Carbon stock in aboveground non-tree biomass in stratum I ($C_{AB\_non\text{-}tree,i}$) and the Carbon stock in belowground non-tree biomass in stratum I ($C_{BB\_non\text{-}tree,i}$), based on VMD0015 v2.2, equation 15.

Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value monitored	Ex-post:0
Monitoring equipment	N/A
QA/QC procedures to be applied	-
Purpose of the data	Calculation of project emissions
Calculation method	Mean live carbon stock of trees and non-tree biomass assumed to be killed is calculated taking in consideration the average carbon stock of trees below the maximum diameter tree that can be within the path of a skid trail, following VMD0015 v2.2, step 02 criteria, and equation 15. See VMD0015 v2.2, equation 14 and 15 at section 4.2.
Comments	No logging activities occurred during this 3rd monitoring period. Thus, does not apply.

Data / Parameter	$\Delta C_{SOC\_sk,i}$
Data unit	t CO^2-e
Description	Carbon stock change in soil organic carbon resulting from skid trail creation in stratum i
Source of data	Calculated according to VMD0015 v2.2, equation 09
Description of measurement methods and procedures to be applied	Calculated based on mean carbon stock in soil organic carbon for stratum i, in year t=0 (CSOC,i,t=0), the Land use factor after conversion; dimensionless (FLU), the management factor after conversion (FMG) and the Input factor after conversion (FI), according to VMD0015 v2.2, equation 09.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value monitored	Ex-post: 0
Monitoring equipment	-

QA/QC procedures to be applied	-
Purpose of the data	Calculation of project emissions.
Calculation method	Initial mean carbon stock in soil organic carbon is measured in laboratory through primary data collected in the field, following VMD0004 v1.0 criteria (see APPENDIX_CARBON-POOLS). Land use, management and input factors are default value given by IPCC (2019). See VMD0015 v2.2, equation 09 at section 4.2.
Comments	No logging activities occurred during this 3rd monitoring period. Thus, does not apply.

Data / Parameter	W_{skid}
Data unit	m
Description	Mean width of skid trails in stratum i
Source of data	Based on the Skidder type model.
Description of measurement methods and procedures to be applied	Interview with the responsible for the forest management operations at the PAI.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value monitored	Ex-post: 0
Monitoring equipment	-
QA/QC procedures to be applied	-
Purpose of the data	Calculation of project emissions.
Calculation method	-
Comments	There were no logging activities in 3rd monitoring period. Thus, does not apply.

Data / Parameter	$\Delta C_{SOC\_sk,i}$
Data unit	t CO_2-e ha^{-1}
Description	Carbon stock change in soil organic carbon resulting from skid trail creation in stratum i.
Source of data	Calculated according to VMD0015 v2.2, equation 09.
Description of measurement methods and procedures to be applied	Estimates are made based on Mean carbon stock in soil organic carbon for stratum I (CSOC,i,t=0),Land use factor after conversion (FLU),Management factor after conversion (FMG), and Input factor after conversion (FI), according to VMD0015 v2.2, equation 09.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value monitored	Ex-post: 0
Monitoring equipment	-
QA/QC procedures to be applied	-
Purpose of the data	Calculation of project emissions.
Calculation method	Calculated according to VMD0015 v2.2, equation 09.
Comments	-
Data / Parameter	FLU
Data unit	Dimensionless
Description	Land use factor after conversion.
Source of data	For Grasslands (table 6.2 of the Volume 4, Chp 6, IPCC (2019))
Description of measurement methods and procedures applied	Default value.
Frequency of monitoring/recording	-

Value applied:	1
Monitoring equipment	-
QA/QC procedures applied	-
Purpose of data	Calculation of baseline.
Calculation method	-
Comments	-

Data / Parameter	FMG
Data unit	Dimensionless
Description	Management factor after conversion.
Source of data	Oliveira et al. (2022)
Description of measurement methods and procedures applied	Default value.
Frequency of monitoring/recording	-
Value applied:	0.9
Monitoring equipment	-
QA/QC procedures applied	-
Purpose of data	Calculation of baseline.
Calculation method	-
Comments	The FMG factor (management factor after conversion), value of 0.9 was used, as described by de Oliveira et al. (2022). This work by Oliveira et al. (2022) is a peer-reviewed scientific article based on a systematic review involving 160 bibliographic data in Brazil, with 49 articles specific to the Amazon region. The results of Oliveira et al. (2022) reveal that over a period of 30 years, degraded pastures show a

	10% reduction in soil organic carbon (SOC) stock compared to forest areas.

Data / Parameter	FI
Data unit	Dimensionless
Description	Land use factor after conversion.
Source of data	For Grasslands (table 6.2 of the Volume 4, Chp 6, IPCC (2019))
Description of measurement methods and procedures applied	Default value.
Frequency of monitoring/recording	-
Value applied:	1
Monitoring equipment	-
QA/QC procedures applied	-
Purpose of data	Calculation of baseline.
Calculation method	-
Comments	-

Data / Parameter	$\Delta C_{ROAD,i,t}$
Data unit	t CO_2-e
Description	Change in carbon stock resulting from logging road creation in stratum i in year t
Source of data	Calculated according to VMD0015 v2.2, equation 17

Description of measurement methods and procedures to be applied	Calculated based on the area of roads in stratum i in year t ($A_{ROAD,i,t}$) and the carbon stock in all pools in the baseline case in stratum I ($C_{BSL,i}$), according to VMD0015 v2.2, equation 17.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value monitored	Ex-post: 0
Monitoring equipment	-
QA/QC procedures to be applied	-
Purpose of the data	Calculation of project emissions
Calculation method	Area of roads is taken from post-harvest assessment reports and post-harvest maps that are based on field measurements. Carbon stock in all pools in the baseline case are estimated as part of the baseline procedures. See VMD0015 v2.2, equation 17 at section 4.2.
Comments	No logging activities occurred during this 3rd monitoring period.

Data / Parameter	$A_{ROAD,i,t}$
Data unit	ha
Description	Area of roads in stratum i in year t.
Source of data	Post exploration reports and associated GIS files.
Description of measurement methods and procedures to be applied	Measured in GIS.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value monitored	Ex-post: 0

Monitoring equipment	-
QA/QC procedures to be applied	-
Purpose of the data	• Calculation of project emissions.
Calculation method	-
Comments	No logging activities occurred during this 3rd monitoring period.

Data / Parameter	$\Delta C_{DECKS,i,t}$
Data unit	t CO_2-e
Description	Change in carbon stock resulting from logging deck creation in stratum i in year t.
Source of data	Calculated according to VMD0015 v2.2, equation 18.
Description of measurement methods and procedures to be applied	Calculated based on the area of logging decks in stratum i in year t ($A_{DECKS,i,t}$) and the carbon stock in all pools in the baseline case in stratum I ($C_{BSL,i}$) according to VMD0015 v2.2, equation 18.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value monitored	Ex-post: 0
Monitoring equipment	-
QA/QC procedures to be applied	-
Purpose of the data	Calculation of project emissions
Calculation method	Area of logging decks is taken from post-harvest assessment reports and post-harvest maps that are based on field measurements. Carbon stock in all pools in the baseline case are estimated as part of the baseline procedures. See VMD0015 v2.2, equation 17 at section 4.2.

Comments	No logging activities occurred during this 3rd monitoring period.

Data / Parameter	$A_{DECKS,i,t}$
Data unit	ha
Description	Area of logging decks in stratum i in year t.
Source of data	Post exploration reports and post-harvest maps.
Description of measurement methods and procedures to be applied	Area of logging decks is taken from post exploration reports and post-harvest maps that are based on field measurements.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value monitored	Ex-post: 0
Monitoring equipment	-
QA/QC procedures to be applied	-
Purpose of the data	Calculation of project emissions.
Calculation method	-
Comments	No logging activities occurred during this 3rd monitoring period.

Data / Parameter	$A_{DistPA,q,i,t}$
Data unit	ha
Description	Area impacted by natural disturbance in the project stratum i converted to natural disturbance stratum q in year t; ha
Source of data	Remote Sensing imagery combined with ground verification

Description of measurement methods and procedures to be applied	Measured in a GIS environment through the DETER database, NBR analysis in Google Earth Engine and verified in the field using direct observation on site.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value monitored	*See* 2551_MR3_CALCULUS_TABLE_INTEGRATED.xsls
Monitoring equipment	Remote sensing data, DETER database, field collection and GIS software's
QA/QC procedures to be applied	Orbital imaging steps will be supervised by a professional with more than ten years of experience remote sensing in tropical forests. In addition, field survey will be adopted to effect and guarantee quality imaging at extremely high spatial resolution. All Digital Image Processing (PDI) steps will be internally rechecked. The orbital imaging results will be compared with data collected in the field for validation, where such quality assurance and control procedures will be led by forest inventory specialists from the BRC team (see APPENDIX_GIS-DATA).
Purpose of the data	Calculation of project emissions.
Calculation method	Spatially explicit information on forest degradation is downloaded from the DETER database and clipped with the spatial boundaries of the project area. A field incursion is carried out mapping the forest canopy and the forest floor surface. Forest gaps are identified based on mapping results and georeferenced. Investigation through direct observation of the mapped sites is carried out to conclude whether the area in question has been affected by any natural source of degradation.
Comments	No logging activities occurred during this 3rd monitoring period.

Data / Parameter	DDRF (Degradation Disturbance Reduction Factor)
Data unit	Dimensionless

Description	Factor by which $A_{dist,q,i,t}$ is reduced to reflect the impact of the baseline degradation on available stocks for reduction due to disturbance
Source of data	Calculated according to VMD0015 v2.2, equation 19
Description of measurement methods and procedures to be applied	Calculated based on the average volume of fuelwood gathered in the project area in the baseline scenario in stratum i in year t ($FG_{BSL,i,t}$), the mean wood density of species harvested for fuelwood or charcoal production (D_{mn}), the carbon fraction of dry matter (CF), the area of stratum I (A_i) and the carbon stock in all pools in the baseline in stratum I ($C_{BSL,i}$), according to VMD0015 v2.2, equation 19.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value monitored	Ex-post: 0
Monitoring equipment	-
QA/QC procedures to be applied	-
Purpose of the data	Calculation of project emissions
Calculation method	Average volume of fuelwood gathered in the project area is estimated based on a Participatory Rural Appraisal (PRA). Basic wood density of all species is taken from the tropical wood density database. Carbon fraction of biomass for dry matter is default according to IPCC (2019). Carbon stock in all pools in the baseline is calculated according to baseline procedures. The area impacted by natural disturbance is proportionally reduced to reflect previous firewood/charcoal extraction, according to VMD0015 v2.2, equation 19. See VMD0015 v2.2, equations 19 and 20 at section 4.2.
Comments	-

Data / Parameter	$A_{burn,i,t}$
Data unit	ha
Description	Area burnt for stratum i in year t.

Source of data	Equal to $A_{DistPA,q,i,t}$ in the project case.
Description of measurement methods and procedures to be applied	For the calculation of project emissions, the burned area is considered equivalent to burn scars monitored plus annual deforested area monitored, assuming that all deforestation is preceded by a fire to clear the land in the project case.
Frequency of monitoring/recording	Annual.
Value monitored	
Monitoring equipment	NBR analysis in Google Earth Engine.
QA/QC procedures to be applied	-
Purpose of the data	Calculation of project emissions
Calculation method	-
Comments	-

Stratum	$A_{burn,i,t}$
As	0.00
Ds	0.00
Aa	5.01
Ab	6.89
D	0.00
Ap	0.00
Db	0.00

Data / Parameter	$C_{P,Dist,q,i}$
Data unit	t CO_2-e ha^{-1}
Description	Carbon stock in all pools in post-natural disturbance q in baseline stratum i.
Source of data	Calculated according to VMD0015 v2.2, equation 24.
Description of measurement methods and procedures to be applied	Calculated based on the carbon stock in aboveground tree biomass in stratum I ($C_{AB\_tree,i}$), carbon stock in belowground tree biomass in stratum I ($C_{BB\_tree,i}$), carbon stock in aboveground non-tree vegetation in stratum I ($C_{AB\_non\text{-}tree,i}$), carbon stock in belowground non-tree vegetation in stratum I ($C_{BB\_non\text{-}tree,i}$), carbon stock in dead wood in stratum I ($C_{DW,i}$), carbon stock in litter in stratum I ($C_{LI,i}$), mean stock in soil

	organic carbon in stratum I ($C_{SOC,i}$), according to VMD0015 v2.2, equation 24.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value monitored	Ex-ante: Coefficient of biomass loss 0.1-0.5, according with Alencar et al. 2006 Ex-post: Coefficient of biomass loss 0.1-0.5, according with Alencar et al. 2006
Monitoring equipment	-
QA/QC procedures to be applied	-
Purpose of the data	Calculation of project emissions
Calculation method	Carbon stock in pools in post-natural disturbance strata is measured following a standard operational procedure for biomass inventory (APPENDIX_CARBON-POOLS), which is based on VMD0001 v1.1, VMD0002 v1.0, VMD0003 v1.0 and VMD0004 v1.0 criteria. Carbon stock sequestered in wood products from harvests following natural disturbance in post-natural disturbance stratum is calculated according to VMD0005 v1.1 in the case of use of wood from the stratum where the disturbances of natural cause occurred. See VMD0015 v2.2, equation 24 at section 4.2.
Comments	

Data / Parameter	$\Delta C_{P,Dist,q,i,t}$
Data unit	t CO_2-e ha^{-1}
Description	Net carbon stock changes in pools as a result of natural disturbance in the project case in post-natural disturbance stratum q in stratum i in year t.
Source of data	Calculated according to VMD0015 v2.2, equation 23.

Description of measurement methods and procedures to be applied	Calculated based on the carbon stock in all pools in the baseline case in stratum I (CBSL,i), carbon stock in pools in post-natural disturbance strata q in stratum I (CP,Dist,q,i) and carbon stock sequestered in wood products from harvests following natural disturbance in post-natural disturbance stratum q, in stratum I (CDist, WP,q,i), according to VMD0015 v2.2, equation 23.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value monitored	

Year	Instance	Stratum (i)	$\Delta C_{P,Dist,q,i,t}$
2023	**PAI #1**	As	482.67
		Ds	516.76
	PAI #2	Aa	418.86
		Ab	442.53
	PAI #3	Aa	418.86
		Ab	442.53
	PAI #4	Aa	418.86
		Ab	442.53
	PAI #5	Aa	418.86
		Ab	442.53
	PAI #6	Db	544.30
	PAI #7		
		D	662.82
	PAI #8		
		D	662.82
	PAI #9		
		D	662.82
	PAI #10		
		D	662.82
	PAI #11		
		D	662.82
	PAI #12		
		D	662.82
	PAI #13	Ap	427.91
		D	662.82
	PAI #14	D	
			662.82
	PAI #15	Ap	427.91
		D	662.82

Monitoring equipment	-

QA/QC procedures to be applied	-
Purpose of the data	Calculation of project emissions
Calculation method	Carbon stock in all pools in the baseline case is calculated as part of the procedures to estimate baseline GHG emissions. Carbon stock in pools in post-natural disturbance strata is measured following a standard operational procedure for biomass inventory (APPENDIX_CARBON-POOLS), which is based on VMD0001 v1.1, VMD0002 v1.0, VMD0003 v1.0 and VMD0004 v1.0 criteria. Carbon stock sequestered in wood products from harvests following natural disturbance in post-natural disturbance stratum is calculated according to VMD0005 v1.1 in the case of use of wood from the stratum where the disturbances of natural cause occurred. See VMD0015 v2.2, equation 23 at section 4.2.
Comments	-

Data / Parameter	$\Delta C_{P,DistPA,i,t}$
Data unit	t CO_2-e
Description	Net carbon stock changes as a result of natural disturbance in the project case in the project area in stratum i in year t.
Source of data	Calculated according to VMD0015 v2.2, equation 20.
Description of measurement methods and procedures to be applied	Estimated based on the Area impacted by natural disturbance in post-natural disturbance stratum q in stratum i, in year t ($A_{DistPA,q,i,t}$), and the net carbon stock changes in pools as a result of natural disturbance in post-natural disturbance stratum q in stratum i in year t ($\Delta C_{P,Dist,q,i,t}$),according to VMD0015 v2.2, equation 20.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value monitored	

Instance	Stratum (i)	$\Delta C_{P,DistPA,i,t}$
PAI #1	As	-
	Ds	-
PAI #2	Aa	92.15

		Ab	97.36
	PAI #3	Aa	841.91
		Ab	0.00
	PAI #4	Aa	917.30
		Ab	2,951.69
	PAI #5	Aa	247.13
		Ab	
	PAI #6	Db	-
	PAI #7	Ap	-
		D	-
	PAI #8	Ap	-
		D	-
	PAI #9	Ap	-
		D	-
	PAI #10	Ap	-
		D	-
	PAI #11	Ap	-
		D	-
	PAI #12	Ap	-
		D	-
	PAI #13	Ap	-
		D	-
	PAI #14	Ap	-
		D	-
	PAI #15	Ap	-
		D	-
Monitoring equipment	-		
QA/QC procedures to be applied	-		
Purpose of the data	Calculation of project emissions		
Calculation method	Calculated according to VMD0015 v2.2, equation 20.		
Comments	-		

Data / Parameter	$GHG_{P,E,i,t}$
Data unit	t $CO_2e.yr^{-1}$
Description	Greenhouse gas emissions as a result of deforestation activities within the within the project area in the project case stratum i in year t.
Source of data	Calculated based on VMD0006 v1.3 equation 30.
Description of measurement methods and procedures to be applied	Calculated based on the non-CO2 emissions due to biomass burning in stratum i in year t ($E_{BiomassBurn,i,t}$), according to VMD0006 v1.3 equation 15.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value monitored	

Instance	Stratum (i)	$GHG_{P-E,i,t}$
PAI #1	As	-
	Ds	-
PAI #2	Aa	5.87
	Ab	6.28
PAI #3	Aa	53.65
	Ab	0.00
PAI #4	Aa	58.45
	Ab	190.36
PAI #5	Aa	15.75
	Ab	
PAI #6	Db	-
PAI #7		
	D	-
PAI #8		
	D	-
PAI #9		
	D	-
PAI #10		
	D	-
PAI #11		
	D	-
PAI #12		
	D	-
PAI #13	Ap	-
	D	-

	<table><tr><td rowspan="2">PAI #14</td><td></td><td></td></tr><tr><td>D</td><td>-</td></tr><tr><td rowspan="2">PAI #15</td><td>Ap</td><td>-</td></tr><tr><td>D</td><td>-</td></tr></table>
Monitoring equipment	-
QA/QC procedures to be applied	-
Purpose of the data	Calculation of project emissions.
Calculation method	Calculated based on VMD0006 v1.3 equation 30.
Comments	Net CO_2e emission from fossil fuel combustion in stratum i in year t ($E_{FC,i,t}$) and direct N_2O emission as a result of nitrogen application on the alternative land use within the project boundary in stratum i in year t ($N_2O_{direct\text{-}N,i,t}$) are conservatively excluded from the project scope and the calculation of the baseline estimates following VM0007 v1.6 section 5.4 criteria.

Data / Parameter	$E_{BiomassBurn,i,t}$
Data unit	t CO_2e
Description	Greenhouse gas emissions due to biomass burning in stratum i in year t of each GHG (CO_2, CH_4, N_2O)
Source of data	Calculated based on VMD0013 v1.3 equation 1.
Description of measurement methods and procedures to be applied	Calculated based on area burnt for stratum i in year t ($A_{burn,i,t}$), average aboveground biomass stock before burning stratum i, in year t ($B_{i,t}$), combustion factor for stratum i (unitless) ($COMF_i$), emission factor for stratum i for gas g ($Gg_{,i}$) and the Global warming potential for gas g (GWP_g), according to VMD0013 v1.3 equation 1.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value monitored	<table><tr><th>Instance</th><th>Stratum (i)</th><th>$E_{biomassburn,i,t}$</th></tr><tr><td rowspan="2">PAI #1</td><td>As</td><td>-</td></tr><tr><td>Ds</td><td>-</td></tr><tr><td rowspan="2">PAI #2</td><td>Aa</td><td>5.87</td></tr><tr><td>Ab</td><td>6.28</td></tr></table>

		PAI #3	Aa	53.65
			Ab	0.00
		PAI #4	Aa	58.45
			Ab	190.36
		PAI #5	Aa	15.75
			Ab	
		PAI #6	Db	-
		PAI #7	Ap	-
			D	-
		PAI #8	Ap	-
			D	-
		PAI #9	Ap	-
			D	-
		PAI #10	Ap	-
			D	-
		PAI #11	Ap	-
			D	-
		PAI #12	Ap	-
			D	-
		PAI #13	Ap	-
			D	-
		PAI #14	Ap	-
			D	-
		PAI #15	Ap	-
			D	-

Monitoring equipment	-
QA/QC procedures to be applied	-
Purpose of the data	Calculation of project emissions.
Calculation method	Calculated based on VMD0013 v1.3 equation 1.
Comments	-

Data / Parameter	$\Delta C_{WPS-REDD}$
Data unit	t CO_2-e
Description	Net GHG emissions in the REDD project scenario up to year t.

Source of data	Calculated according to VMD0015 v2.2, equation 01.
Description of measurement methods and procedures to be applied	Calculated based on net carbon stock change as a result of deforestation in the project area in the project case in stratum i in year t ($\Delta C_{P,DefPA,i,t}$), Net carbon stock change as a result of degradation in the project area in the project case in stratum i in year t ($\Delta C_{P,Deg,i,t}$), Net carbon stock change as a result of natural disturbance in the project area in the project case in stratum i in year t ($\Delta C_{P,DistPA,i,t}$) and Greenhouse gas emissions as a result of deforestation and degradation activities within the project area in the project case in stratum i in year t ($GHG_{P-E,i,t}$), according to VMD0015 v2.2, equation 01.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value monitored	**ΔCWPS-REDD**: 38,244
Monitoring equipment	N/A
QA/QC procedures to be applied	BRC GHG information system and controls associated with the project and its monitoring. This information system rules the process for obtaining, recording, compiling and analyzing data and information important for quantifying and reporting GHG emissions and removals relevant for the project (including leakage) and baseline scenario (see 2551_MR3_CALCULUS_TABLE_INTEGRATED.xsls).
Purpose of the data	Calculation of project emissions
Calculation method	See VMD0015 v2.2, equation 01.
Comments	-

Data / Parameter	$\Delta C_{LK-REDD}$
Data unit	t CO_2e

Description	Net GHG emissions due to leakage from the REDD project activity up to year t*
Source of data	Calculated according to VMD0007 v1.6 equation 4.
Description of measurement methods and procedures to be applied	Calculated based on net GHG emissions due to activity shifting leakage for projects preventing planned deforestation up to year t ($\Delta C_{LK-AS,planned}$), and the Net GHG emissions due to market-effects leakage up to year t*(ΔC_{LK-ME}), according to VMD0007 v1.6 equation 4.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value monitored	**Leakage emissions** **ΔCLK-REDD** **131,980**
Monitoring equipment	-
QA/QC procedures to be applied	-
Purpose of the data	• Calculation of leakage.
Calculation method	Calculated according to VMD0007 v1.6 equation 4.
Comments	-

Data / Parameter	$\Delta C_{LK-AS,planned}$
Data unit	t CO2e
Description	Net GHG emissions due to activity shifting leakage for projects preventing planned deforestation up to year t*
Source of data	Calculated according to VMD0009 v1.3, equation 01.
Description of measurement methods and procedures to be applied	Calculated based on the area of activity shifting leakage in stratum i in year t (LKAplanned,i,t), the net carbon stock changes in all pre-deforestation pools in baseline stratum I, (ΔCBSL,i) and the Greenhouse gas emissions as a result of

	leakage of avoiding deforestation activities in stratum i in year t ($GHG_{LK,E,i,t}$), according to VMD0009 v1.3, equation 01.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value monitored	<table><tr><th>Stratum</th><th>ΔCLK-AS,planned</th></tr><tr><td>Ab</td><td>27,324</td></tr><tr><td>Aa</td><td>3,841</td></tr><tr><td>As</td><td>8,814</td></tr><tr><td>Fs</td><td>6,698</td></tr></table>
Monitoring equipment	-
QA/QC procedures to be applied	-
Purpose of the data	Calculation of leakage.
Calculation method	Calculated according to VMD0009 v1.3, equation 01.
Comments	-

Data / Parameter	$LK_{Aplanned,i,t}$
Data unit	ha
Description	The area of activity shifting leakage in stratum i in year t.
Source of data	Calculated according to VMD0009 v1.3, equation 06.
Description of measurement methods and procedures to be applied	Calculated according to the total area of monitored deforestation by the baseline agent of the planned deforestation in stratum i in year t ($A_{defLK,i,t}$), and the New calculated forest clearance by the baseline agent of the planned deforestation in stratum i in year t where no leakage is occurring ($NewR_{i,t}$).
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value monitored	Ex-ante: See the values applied in 2551_MR3_CALCULUS_TABLE_INTEGRATED.xsls Ex-post:

	<table><tr><th>Stratum</th><th>LKAplanned,i,t (ha)</th></tr><tr><td>Ab</td><td>51</td></tr><tr><td>Aa</td><td>8</td></tr><tr><td>As</td><td>14</td></tr><tr><td>Fs</td><td>18</td></tr></table>
Monitoring equipment	-
QA/QC procedures to be applied	-
Purpose of the data	Calculation of leakage.
Calculation method	Calculated according to VMD0009 v1.3, equation 06.
Comments	-

Data / Parameter	$A_{defLK,i,t}$
Data unit	ha
Description	The total area of monitored deforestation by the baseline agent of the planned deforestation in stratum i in year t.
Source of data	Remote sensing imagery (Sentinel 2, Landsat 8), PRODES database.
Description of measurement methods and procedures to be applied	Annual deforestation is measured in GIS using remote sensing techniques and reported with spatial explicit data by raster and shapefile. evidence.
Frequency of monitoring/recording	Annual
Value monitored	Ex-ante: 0 - 2551_MR3_CALCULUS_TABLE_INTEGRATED.xsls Ex-post: 0 2551_MR3_CALCULUS_TABLE_INTEGRATED.xsls
Monitoring equipment	Landsat 8 OLI, Sentinel MSI.

QA/QC procedures to be applied	Accuracy assessment of PRODES classification was performed by comparing each class of the land cover map from the reference period (2011 to 2021 - Acre and 2012 to 2022 - Para) with a set of 200 points randomly distributed over the reference region for each year. The reference data used for this step comes from the visual interpretation of high spatial resolution images available in Google Earth. The global accuracy of the mapping for the different classes of land cover presented values above 95% for all three classes in each year analyzed. The overall accuracy of the forest cover reference map (2020) was 95.5%. In 2022, satellite images were used to validate the APD areas. Landsat 8 was used for 10 years before the start of the project and Sentinel 2 for the start date. An algorithm based on machine learning (Random Forest) was used for the classification of the images, the methodological details and accuracy of which are presented by PAI in Forest_Class_Validation_2022 of APPENDIX_GIS-DATA..
Purpose of the data	Calculation of leakage.
Calculation method	Classified images with information about the area of annual deforestation in Brazil are downloaded from PRODES websites and clipped with the project area spatial limits. Images from Sentinel are downloaded from ESA.
Comments	-

Data / Parameter	$NewR_{i,t}$
Data unit	ha
Description	New calculated forest clearance by the baseline agent of the planned deforestation in stratum i in year t where no leakage is occurring.
Source of data	Calculated according to VMD0009 v1.3, equation 04 or 05.
Description of measurement methods and procedures to be applied	Calculated based on projected annual proportion of land that will be deforested outside the project boundary in stratum i in year t ($D\%_{planned,i,t,OP}$), and Total area of planned deforestation outside the project boundary over the baseline period for stratum I ($A_{planned,i,OP}$), according to equation 04 or based on Deforestation by the baseline agent of the planned

	deforestation in stratum i in year t in the absence of the project ($WoPR_{i,t}$), projected annual proportion of land that will be deforested in project stratum i in year t ($D\%_{planned,i,t}$), and Total area of planned deforestation over the baseline period for project stratum I ($A_{planned,i}$).
Frequency of monitoring/recording	Annual
Value monitored	Ex-ante: 0 Ex-post: 0
Monitoring equipment	-
QA/QC procedures to be applied	-
Purpose of the data	Calculation of leakage.
Calculation method	Calculated according to VMD0009 v1.3, equation 04 or 05.
Comments	Equation 04 is used when an identified deforestation agent has made public a business plan or similar documentation containing data suited for estimating a conversion rate over the baseline period. Equation 05 is used when the conversion rate must be estimated. In the case of equation 05 is used, the projected annual proportion of land that will be deforested is the same used to set the baseline, while the deforestation provoked by the identified deforestation agent is calculated by VMD0009 v1.3, equation 01 or 02.

Data / Parameter	$D\%_{planned,i,t,OP}$
Data unit	%
Description	Projected annual proportion of land that will be deforested outside the project boundary in stratum i in year t.
Source of data	Deforestation permits for areas outside the project boundary.
Description of measurement methods and procedures to be applied	Defined in deforestation permits.

Frequency of monitoring/recording	N/A
Value monitored	Ex-post: 0
Monitoring equipment	N/A
QA/QC procedures to be applied	N/A
Purpose of the data	Calculation of leakage.
Calculation method	N/A
Comments	This parameter is used when an identified deforestation agent has made public a business plan or similar documentation containing data suited for estimating a conversion rate over the baseline period in areas outside the project boundary.

Data / Parameter	$A_{planned,i,OP}$
Data unit	ha
Description	Total area of planned deforestation outside the project boundary over the baseline period for stratum i
Source of data	Deforestation permits for areas outside the project boundary.
Description of measurement methods and procedures to be applied	Defined in deforestation permits.
Frequency of monitoring/recording	N/A
Value monitored	Ex-post: 0
Monitoring equipment	N/A
QA/QC procedures to be applied	N/A
Purpose of the data	Calculation of leakage.

Calculation method	N/A
Comments	This parameter is used when an identified deforestation agent has made public a business plan or similar documentation containing data suited for estimating a conversion rate over the baseline period in areas outside the project boundary.

Data / Parameter	$WoPR_{i,t}$
Data unit	ha
Description	Deforestation by the baseline agent of the planned deforestation in the absence of the project in stratum i in year t.
Source of data	Calculated according to VMD0009 v1.3, equation 01 or 02.
Description of measurement methods and procedures to be applied	Projected based on linear regression according to VMD0009 v1.3 equation 01 or based on number of hectares of forest cleared by the baseline agent of the planned deforestation in the five years prior to project implementation in stratum i by agent ag within the country ($HistHa_{i,ag}$), according to VMD0009 v1.3 equation 02.
Frequency of monitoring/recording	Annual
Value monitored	
Monitoring equipment	N/A
QA/QC procedures to be applied	N/A
Purpose of the data	Calculation of leakage.

Stratum (i)	Year(t)	WoPR,i,t
Aa	2023	670.00
Ab	2023	1,224.00
Ap	2023	293.59
As	2023	186.00
D	2023	1,082.92
Db	2023	910.11
Ds	2023	92.00

Calculation method	Equation 01 is used when the results of the analysis must produce a statistically significant regression with a p≤0.05 and an adjusted r2 of ≥0.75. The regression is calculated based on the deforested by the deforestation agent each year over the previous five years within the country. Where no statistically significant regression can be found, equation 02 is used
Comments	-

Data / Parameter	HistHai,ag
Data unit	ha
Description	Number of hectares of forest cleared by the baseline agent of the planned deforestation in the five years prior to project implementation in stratum i by agent ag within the country
Source of data	Remote sensing imagery (Sentinel 2, Landsat 8), PRODES database.
Description of measurement methods and procedures to be applied	Annual deforestation is measured in GIS using remote sensing techniques and reported with spatial explicit data by raster and shapefile. evidence.
Frequency of monitoring/recording	Annual
Value monitored	Ex-post: see the values applied in 2551_MR3_CALCULUS_TABLE_INTEGRATED.xsls
Monitoring equipment	Landsat 8 OLI, Sentinel MSI.
QA/QC procedures to be applied	The accuracy assessment of the deforestation database classification (PRODES/DETER) was conducted using a set of 200 points randomly distributed across the properties. Each point was classified as forest or non-forest based on PRODES/DETER data and visual analysis of Planet and Sentinel-2 satellite images. Comparing these results, an overall accuracy of 96% for the PRODES/DETER data was concluded.
Purpose of the data	Calculation of leakage.

Calculation method	Classified images with information about the area of annual deforestation in Brazil are downloaded from PRODES websites and clipped with the project area spatial limits. Images from Sentinel are downloaded from ESA.
Comments	-

Data / Parameter	$GHG_{LK,E,i,t}$
Data unit	t CO_2e
Description	Greenhouse gas emissions as a result of leakage of avoiding deforestation activities in stratum i in year t.
Source of data	Calculated according to VMD0009 v1.3, equation 07.
Description of measurement methods and procedures to be applied	Calculated based on Non-CO2 emissions due to biomass burning in stratum i in year t ($E_{biomassburn,i,t}$), according to VMD0009 v1.3, equation 07.
Frequency of monitoring/recording	Annual
Value monitored	Ex-ante: 0 Ex-post:
Monitoring equipment	-
QA/QC procedures to be applied	-
Purpose of the data	Calculation of leakage
Calculation method	Calculated according to VMD0009 v1.3, equation 07
Comments	-

Stratum	GHGLK,E,i,
Ab	1,459
Aa	206
As	475
Fs	364

Data / Parameter	$\Delta C_{LK\text{-}ME}$
Data unit	t CO_2-e
Description	Net greenhouse gas emissions due to market- effects leakage
Source of data	Calculated according to VMD0011 v1.0 equation 1.
Description of measurement methods and procedures to be applied	Calculated based on Total GHG emissions due to market-effects leakage through decreased timber harvest ($LK_{MarketEffects,timber}$), and Total GHG emissions due to market leakage through decreased harvest of fuelwood and charcoal sold into regional and/or national markets ($LK_{MarketEffects,FW/C}$),according to VMD0011 v1.0 equation 1.
Frequency of monitoring/recording	Annual
Value monitored	**$\Delta C_{LK\text{-}ME}$** 85,303
Monitoring equipment	-
QA/QC procedures to be applied	-
Purpose of the data	Calculation of leakage
Calculation method	Calculated according to VMD0011 v1.0 equation 1.
Comments	-

Data / Parameter	$LK_{MarketEffects,timber}$
Data unit	t CO_2-e
Description	Total GHG emissions due to market- effects leakage through decreased timber harvest
Source of data	Calculated according to VMD0011 v1.0 equation 2

Description of measurement methods and procedures to be applied	Calculated according to leakage factor for market-effects calculations (LF_{ME}) and summed emissions from timber harvest in stratum i in the baseline case potentially displaced through implementation of carbon project ($ALT_{,i}$), according to VMD0011 v1.0 equation 2.
Frequency of monitoring/recording	Annual
Value monitored	$LK_{MarketEffects,timber}$: 83,331
Monitoring equipment	-
QA/QC procedures to be applied	-
Purpose of the data	Calculation of leakage
Calculation method	Calculated according to VMD0011 v1.0 equation 2
Comments	-

Data / Parameter	LF_{ME}
Data unit	Dimensionless
Description	Leakage factor for market-effects calculations.
Source of data	Default data from VMD0011 v1.0
Description of measurement methods and procedures to be applied	A comparison between the proportion of total biomass in commercial species that is merchantable (PMP_i) and the mean proportion of total biomass that is merchantable for each forest type (PML_{FT}) was performed based on the wood volume to be extracted in PAIs #01 and #02 and the wood volume found by the RADAMBRASIL project for all types of forest existing in the project area in all states of Amazonia Legal.
Frequency of monitoring/recording	Annual
Value monitored	0.2
Monitoring equipment	-

QA/QC procedures to be applied	-
Purpose of the data	Calculation of leakage
Calculation method	See Appendix IX_Leakage Management of the 1st Monitoring Report.
Comments	-

Data / Parameter	PMP_i
Data unit	m^3
Description	Total volume in commercial species that is merchantable.
Source of data	Pre-exploratory inventories/Forest Exploration Plans.
Description of measurement methods and procedures to be applied	Commercial species volume was evaluated in both PAIs for all trees with DBH above 30cm.
Frequency of monitoring/recording	-
Value monitored	See values applied in " 2551_MR3_CALCULUS_TABLE_INTEGRATED.xsls

Instance	PMPi (m³)
PAI #1	17
PAI #2	27.6
PAI #3	22.3
PAI #4	22.3
PAI #5	22.3
PAI #6	22.3
PAI #7	22.3
PAI #8	22.3
PAI #9	22.3
PAI #10	22.3
PAI #11	22.3
PAI #12	22.3
PAI #13	22.3
PAI #14	22.3
PAI #15	22.3

Monitoring equipment	-
QA/QC procedures to be applied	-
Purpose of the data	-
Calculation method	-
Comments	-

Data / Parameter	LDF
Data unit	t C m-3
Description	Logging damage factor.
Source of data	Default value provided by VMD0011 v1.0.
Description of measurement methods and procedures to be applied	-
Frequency of monitoring/recording	-
Value monitored	0.53
Monitoring equipment	-
QA/QC procedures to be applied	-
Purpose of the data	Calculation of leakage.
Calculation method	-
Comments	See VMD0011 v1.0 equation 4.

Data / Parameter	LIF
Data unit	t C m-3

Description	Logging infrastructure factor.
Source of data	Default value provided by VMD0011 v1.0.
Description of measurement methods and procedures to be applied	-
Frequency of monitoring/recording	-
Value monitored	0.29
Monitoring equipment	-
QA/QC procedures to be applied	-
Purpose of the data	• Calculation of leakage.
Calculation method	-
Comments	See VMD0011 v1.0 equation 4.

Data / Parameter	$LK_{MarketEffects,FW/C}$
Data unit	t CO_2-e
Description	Total GHG emissions due to market leakage through decreased harvest of fuelwood and charcoal sold into regional and/or national markets
Source of data	Calculated according to VMD0011 v1.0 equation 5.
Description of measurement methods and procedures to be applied	Calculated based on Leakage factor for market effects calculations (LF_{ME}), and the summed emissions from fuelwood/charcoal harvests in stratum i in the baseline case potentially displaced through implementation of carbon ($AL_{FW/C,i}$), according to VMD0011 v1.0 equation 5.
Frequency of monitoring/recording	Annual
Value monitored	$LK_{MarketEffects,FW/C}$: 1,972

Monitoring equipment	-
QA/QC procedures to be applied	-
Purpose of the data	Calculation of leakage
Calculation method	Calculated according to VMD0011 v1.0 equation 5.
Comments	-

Data / Parameter	NER_{REDD}
Data unit	t CO_2e
Description	Total net GHG emission reductions of the REDD project activity up to year t (t CO2e).
Source of data	Calculated according to VM0007 v1.6 equation 2.
Description of measurement methods and procedures to be applied	Calculated based on the net GHG emissions in the REDD baseline scenario up to year t ($\Delta C_{BSL-REDD}$), the net GHG emissions in the REDD project scenario up to year t ($\Delta C_{WPS-REDD}$) and the net GHG emissions due to leakage from the REDD project activity up to year t ($\Delta C_{LK-REDD}$), according to VM0007 v1.6 equation 2.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value monitored	
Monitoring equipment	-
QA/QC procedures to be applied	-
Purpose of the data	Calculation of VCUs
Calculation method	According to VM0007 v1.6 equation 2.
Comments	-

Year	NER_{REDD}
2023	2,305,305
Total	2,305,305

Data / Parameter	$Buffer_{Planned}$
Data unit	t CO2e
Description	Buffer withholding for avoiding planned deforestation project activities
Source of data	Calculated according to VM0007 v1.6 equation 8.
Description of measurement methods and procedures to be applied	Calculated based on the net greenhouse gas emissions in the baseline from planned deforestation up to year t ($\Delta C_{BSL,planned}$) and the buffer withholding percentage (Buffer%), according to VM0007 v1.6 equation 8.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value monitored	

Year	$Adjusted\_NER_{REDD+}$	$Buffer_{Planned}$
2023	2,305,305	292,474
Total	2,305,305	292,474

Monitoring equipment	-
QA/QC procedures to be applied	-
Purpose of the data	Calculation of VCUs
Calculation method	Calculated according to VM0007 v1.6 equation 8.
Comments	See details in 2551_MR3_CALCULUS_TABLE_INTEGRATED.xsls.

Data / Parameter	$Uncertainty_{REDD-BSL, SS}$
Data unit	%
Description	Total uncertainty in the combined carbon stocks and greenhouse gas sources in the REDD baseline scenario
Source of data	Calculated according to VMD0017 v2.2 equation 5.

Description of measurement methods and procedures to be applied	Calculated based on the percentage uncertainty in the combined carbon stocks and greenhouse gas sources in stratum i in the REDD baseline scenario ($U_{REDD\text{-}BSL,SS,i}$), and the sum of combined carbon stocks and GHG sources in the REDD baseline scenario ($E_{REDD\text{-}BSL,SS,t,i}$),according to VMD0017 v2.2 equation 5.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value monitored	0.6 % (“Table_Uncertainty” of the Appendix II – Calculus table – Consolidade results in integrated spreadsheets)
Monitoring equipment	-
QA/QC procedures to be applied	-
Purpose of the data	Calculation of VCUs
Calculation method	Calculated according to VMD0017 v2.2 equation 5.
Comments	Uncertainty in baseline rate of deforestation is set as zero ($Uncertainty_{REDD\text{-}BSL,RATE} = 0$), as the deforestation rates are based on actual deforestation plans, following VMD0017 v2.2, section 5.1.1 criteria. In this sense $Uncertainty_{REDD\text{-}BSL,SS}$ equals to cumulative uncertainty in REDD baseline scenario up to year t ($_{UncertaintyREDD\text{-}BSL,t*}$).

Data / Parameter	$Uncertainty_{REDD\text{-}WPS}$
Data unit	%
Description	Total uncertainty in the REDD project scenario
Source of data	Calculated according to VMD0017 v2.2 equation 13.
Description of measurement methods and procedures to be applied	Calculated according to the percentage uncertainty in the combined carbon stocks and greenhouse gas sources in stratum i in the REDD project scenario ($U_{REDD\text{-}WPS,SS,i}$) and the sum of combined carbon stocks and GHG sources multiplied by the area of stratum i (A_i) in the REDD project scenario ($E_{REDD\text{-}WPS,SS,t,i}$), according to VMD0017 v2.2 equation 13.

Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value monitored	Ex-post: See the values applied in folder APPENDIX_CALCULUS-TABLES and file "2551_MR3_CALCULUS_TABLE_INTEGRATED.xlsx", spreadsheet "19. Uncertainty analysis".
Monitoring equipment	-
QA/QC procedures to be applied	-
Purpose of the data	Calculation of VCUs.
Calculation method	Calculated according to VMD0017 v2.2 equation 13.
Comments	-

Instance	Uncertainity REDD-BSL,SS
#01	3.83%
#02	3.96%
#03	3.96%
#04	3.96%
#05	3.96%
#06	7.84%
#07	3.64%
#08	3.64%
#09	3.64%
#10	3.64%
#11	3.64%
#12	3.64%
#13	2.65%
#14	3.64%
#15	2.65%
$Uncertainty_{REDD-WPS}$	0.6%

Data / Parameter	NER_{REDD+_ERROR}
Data unit	%
Description	Cumulative uncertainty for the REDD+ project activities up to year t

Source of data	Calculated according to VMD0017 v2.2 equation 21
Description of measurement methods and procedures to be applied	Calculated based on Cumulative uncertainty in REDD baseline scenario up to year t ($Uncertainty_{REDD\_BSL,t}$), the total uncertainty in the REDD project scenario ($Uncertainty_{REDD\_WPS}$), the Net GHG emissions in the REDD baseline scenario up to year t ($\Delta C_{BSL-REDD,t}$), and the Net GHG emissions in the REDD project scenario up to year t ($\Delta C_{WPS-REDD,t}$), according to VMD0017 v2.2 equation 21
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value monitored	**Year** | **NER_{REDD+_ERROR}** 2023 | 173,294 **Total** | 173,294
Monitoring equipment	-
QA/QC procedures to be applied	-
Purpose of the data	Calculation of VCUs
Calculation method	Calculated according to VMD0017 v2.2 equation 21
Comments	-

Data / Parameter	$Adjusted\_NER_{REDD+}$
Data unit	%
Description	Total net GHG emission reductions of the REDD+ project activities up to year t* adjusted to account for uncertainty
Source of data	Calculated according to VMD0017 v2.2 equation 21
Description of measurement methods and procedures to be applied	Calculated based on the total net GHG emission reductions of the REDD project activity up to year t (NER_{REDD}), and the cumulative uncertainty for the REDD+ project activities up to year t (NER_{REDD+_ERROR}).
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.

Value monitored	<table><tr><th>Year</th><th>Adjusted_NER$_{REDD+}$</th></tr><tr><td>2023</td><td>2,305,305</td></tr><tr><td>Total</td><td>2,305,305</td></tr></table>
Monitoring equipment	-
QA/QC procedures to be applied	-
Purpose of the data	Calculation of VCUs.
Calculation method	Calculated according to VMD0017 v2.2 equation 21.
Comments	-

Data / Parameter	VCUt
Data unit	VCU
Description	Number of Verified Carbon Units at year t* or t2 - t1
Source of data	Calculated according to VMD0017 v2.2 equation 19.
Description of measurement methods and procedures to be applied	Calculated based on the total net GHG emission reductions of the REDD+ project activity up adjusted to account for uncertainty (Adjusted_NER$_{REDD+}$), and the total permanence risk buffer withholding (Buffer$_{Planned}$), according to VMD0017 v2.2 equation 19.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value monitored	<table><tr><th>Year</th><th>VCU$_t$</th></tr><tr><td>2023</td><td>2,012,831</td></tr><tr><td>Total</td><td>2,012,831</td></tr></table>
Monitoring equipment	-
QA/QC procedures to be applied	-
Purpose of the data	• Calculation of VCUs
Calculation method	Calculated according to VMD0017 v2.2 equation19.
Comments	-

3.1.3 Monitoring Plan (VCS, 3.16, 3.20)

For all project activity instances, already verified or under verification, project implementation will be monitored considering the project activities as defined in section 1.11. The GPD presents a range of potential project activities. The project activities may vary among PAIs. Below we present relevant information, following VM0007 v1.6 section 9.3.1 and VMD0015 v2.2 criteria. For this monitoring report the VM0007 v1.6 section 9.3.1 address the task that must be included in monitoring plan:

- Monitoring actual carbon stock changes and greenhouse gas emissions.

This section also includes the following information:

a) Technical description of the monitoring task

b) Data collected

c) Overview of data collection procedures

d) Quality control and quality assurance procedure

e) Data archiving

f) Organization and responsibilities of the parties involved in all of the above

For all project activity instances, already verified or under verification, BRC will be responsible for the project activity implementation and its monitoring. Implementation of specific project activities can be carried out by external consultants operating under supervision of BRC. Digital files are always stored in BRC database[8]. Hard copies are archived at BRC headquarters[9]. The following table specifies and summarizes the process during the monitoring period.

Table 30. Project monitored activities.

[8] Backed up at OneDrive associated with a corporative Microsoft account.

[9] Av. Cezira Giovanoni Moretti 655, sala 7 AgTech Garage Reserva dos Jequitibás, Piracicaba, São Paulo.

Standardized Benefits Category	Project activity	Technical description of the monitoring task	Evidence and arguments
Forest Cover/GHG emission reduction	Legal Protection	Legal protection for the forests was granted through signature of long-term conservation agreements with landowners of each PAI. This activity will be monitored 'through verifications on the ongoing administrative processes to close new deals with landowners in each quarter.	The agreements are made for 30 years and imply landowners' commitment to the conservation of specific forest areas on their properties. In other words, by signing the agreement, landowners undertake not to carry out activities that involve the forest conversion to other land uses, such as livestock or agriculture, for the project lifetime. Agreements can be renewed for up to 100 years. No changes are reported in the agreement document during monitoring period. The assignment agreement dates are detailed in Appendix I – Legal Agreements.
Forest Cover/GHG emission reduction	Surveillance	Deforestation, forest degradation and burn scars were monitored though satellite images and with ground truth verifications during this monitoring period. Land use change maps and orbital imagery collected from PRODES & DETER/INPE[10], Mapbiomas[11] and ESA[12].	Deforestation/degradation was monitored using satellite images covered area to detect natural and anthropogenic disturbances. The Satellite imageries from PRODES and DETER refer the period of January and december 2023. All the data used was stored in "Appendix V – Monitoring" in which includes script codes for GEE and all spreadsheets for fires disturbances, deforestation

[10] http://terrabrasilis.dpi.inpe.br/

[11] https://mapbiomas.org/

[12] https://sentinels.copernicus.eu/web/sentinel/home

Standardized Benefits Category	Project activity	Technical description of the monitoring task	Evidence and arguments
			from alert systems.
GHG emission reduction	Biomass Inventory	Biomass will be re-measured after the first baseline period, that is, with a 10-year interval. Carbon stock change in every pool will be estimated by stock difference method. As mentioned in early monitoring report, for live Aboveground biomass in trees will be estimated through UAV-LiDAR surveys. Non-tree biomass component and below ground biomass on tree and non-tree component will be indirectly estimated through default values for conversion factors from peer-review studies. Dead wood and litter will be re-measured from direct measurement in the same permanent plots used to validate the LiDAR estimates. Estimates will be considered within a 90% confidence interval with a threshold error of 10%. New estimates shall take precedence over previous estimates where outside (i.e. greater than or less than) the 90% confidence interval of the previous estimates. For a complete description over forest biomass measurement methods check standard operational procedures (Appendix IV_Carbon pools).	No re-measured of included carbon pools has occurred during this monitoring period. All procedures are entirely described in Appendix IV_Carbon Pools folder, including all LiDAR products used in the analyses (rasters, shapefiles, spreadsheets, etc).
Sustainable Forest Management	FSC Certification	Forest management operations can only take	Potential non-timber forest products were initiated: Brazil

Standardized Benefits Category	Project activity	Technical description of the monitoring task	Evidence and arguments
		place in the project area if FSC certified. Annual investments to enhance forest management practices and adequate to FSC standard[13] in almost all PAIs were implemented. The operations include training and direct investments in infrastructure, machinery, and equipment in a case-by-case basis. In this sense, necessary investments are a landowner's responsibility. FSC certification is a pre-condition for a specific PAI monitoring under the GPD. Internal audits against FSC Standard will be carried out to verify this project activity implementation before each verification event, with a maximum frequency of 05 years. Independent third-party audits will be performed annually to maintain FSC certification status of each PAI where copaibae forest management operations take place as valid.	nuts at Porongaba Farm (PAI #1 and PAI#4) and copaíba in Katianã and Potiguar. (PAI#2 and PAI#5). In addition, in November 2023 the landowner Batista & Cia received the FSC Forest Management seal for Conservation. See section 4.3.1 for more information.
GHG emission reduction	Leakage mitigation	Potential activity shifting leakage were mitigated through advocacy with landowners within the project scope. The area of monitored activity shifting leakage and associated GHG emissions in each PAI, were summarized in a Table 44, section 3.2.3.	Net GHG emissions due to activity shifting leakage ($\Delta CLK\text{-}AS,planned$) is zero in the most part of the properties in the third monitoring period, once there are no deforested areas across these other lands managed by the identified deforestation agents

[13] FSC-STD-BRA-01-2001 v1.1

Standardized Benefits Category	Project activity	Technical description of the monitoring task	Evidence and arguments
			disregarding the project boundary.
GHG emission reduction	Wildfire Prevention and Fire Fighting	We offered to communities living inside the project area a way to prevent wildfires to spread. Good management practices training has focus on risk control and mitigation measures. Firefighting training takes place for the formation of volunteer brigades. Wildfire can also be prevented by firebreaks implementation. Finally, wildfires spread were prevented through fast brigade responses. In this sense, this project activity encompasses the implementation of monitoring towers with cameras capable of detecting smoke patterns automatically. These surveillance systems can detect fire in a 15Km ratio and warn the brigades leaders within 05 minutes from the fire start. The implementation of this system will depend on the volunteer brigade formation and on the implementation of an effective communication system in each PAI. Monitoring towers implementation will be reported in “activity reports.	We developed a fire alert monitoring system, based on Global Forest Watch which helps us control actions in relation to forest fires. Fire monitoring is found in Appendix V ("Monitoring 3 2023").

3.1.3.1 Monitoring of actual Carbon Stock Changes, GHG emissions and Leakage

This monitoring task followed the VMD0015 v2.2 criteria, which provides methods for monitoring ex post emissions and removals of GHGs, due to deforestation, forest degradation, natural disturbances

and carbon stock enhancement in the project area and leakage belt. The monitoring of actual carbon stock changes and GHG emissions is performed in tree steps:

3.1.3.2 Selection and Analyses of sources of land-use and land-cover (LU/LC) change data

This project uses different sources of GIS for assessing land-use and land-cover change in the project area and leakage belt. To compose the initial data for the monitoring process, a set of deforestation and degradation alerts is used. For the annual quantification of the change in land use from the Forest class to the non-Forest class, the Brazilian Amazon Forest Satellite Monitoring Program (PRODES) is also used, under the responsibility of the National Institute for Space Research (INPE). To quantify the change in land use continuously on a weekly scale, as well as degradation activities, the Real-Time Deforestation Detection System (DETER) is used, also under the responsibility of INPE (INPE, 2019; Assis et al. 2019).

As a complementary alert system, the Global Forest Watch integrated monitoring system is used, consisting of three alert systems: GLAD (Hansen et al., 2016), GLAD-S2 (Pickens et al., 2020) and RADD (Reiche et al. 2021). Another system used is MapBiomas Alerta (MapBiomas Alerta Project, 2023), a compilation of data from several providers (e.g. INPE, IMAZON, University of Maryland, among others) validated with high-resolution images.

Fire degradation is also monitored using the Fire Information for Resource Management System (FIRMS), under the responsibility of NASA (National Aeronautics and Space Administration). This data distributes real-time active fire information from the Visible Infrared Imaging Radiometer Suite (VIIRS) aboard the S-NPP and NOAA20 satellites (Schroeder et al. 2014). These detections are stored weekly and intersected in the Project Areas and Leakage Belt. It is very important to note that this data provides fire alerts that allow us to monitor but does not allow us to quantify the area degraded by fire, it only indicates burning activity within a radius of 375 meters. Therefore, using satellite images from DETER data, the area of forest fires within the monitored areas is quantified. In this context, the fire area to be reduced in the biomass stock is measured.

Cartographic information is made available openly and free of charge on the web and is downloaded, stored, and organized on BRC cloud. Furthermore, to control and guarantee the quality of initial data alerts, we validate deforestation polygons with supervised interpretation using satellite images. The satellite images used to validate the initial data are obtained via Google Earth Engine, distributed by the responsible agencies with correction and normalization processing to extract surface reflectance data. The set of images used is composed of images from the Sentinel 2 satellites (MSI sensor, Multispectral Instrument), Landsat 9 (OLI-2 sensor, Operational Land Imager 2) and monthly

mosaics from Planet NICFI (Norway's International Climate and Forests Initiative Satellite Data Program). The use of SAR (Synthetic Aperture Radar) images from Sentinel 1 is in the process of being implemented. Images from the CBERS 4A satellite (WFI sensor, Wide Field Camera), obtained from the INPE image catalogue, are also used.

3.1.3.3 Processing LU/LC change data

The monitoring system is structured to collect and process data from different sources, such as INPE, FIRMS, GFW and MAPBIOMAS, using the R language. After processing, the data was crossed with the monitored properties and stored. Alert validation occurs weekly, using satellite images manipulated via Google Earth Engine. The results are documented in partial, monthly and annual reports, which include georeferencing, quantification and visual validation of deforestation polygons (Figure 5).

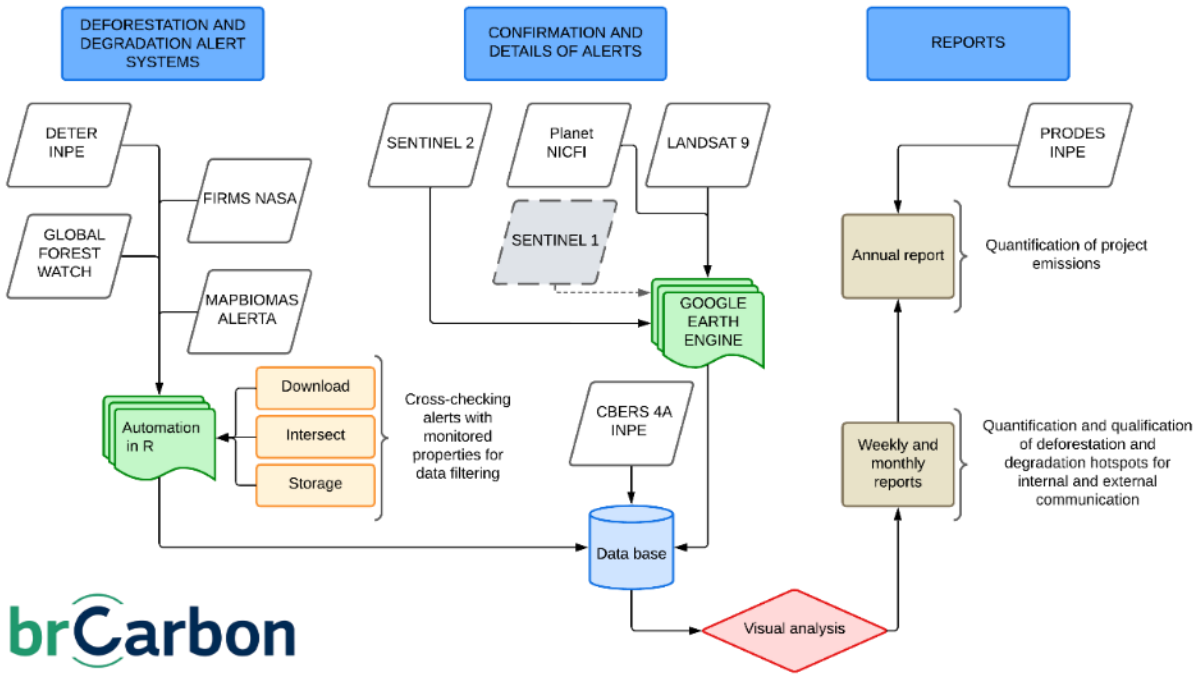


Figure 6. Flowchart of the monitoring system's technical procedures.

3.1.3.4 Post-processing and accuracy assessment

The PRODES[14] project data was used to monitor land use change in all the lands managed by the identified deforestation agent (including the project area and lands outside the project boundary). Forest cover benchmark maps were provided and updated as soon as the data was released by INPE.

Data from DETER services were used weekly to evaluate deforestation and forest degradation alerts (ADegW,i, ADistPA,i,t, Aburn,i,t). Burn scars from wildfires (Aburn,q,i,t) are measured according to ∆NBR ΔNBR47 spectral index and verified with high spatial resolution satellite imagery from Sentinel based on Google Earth Engine platform, along with ground verifications. Alerts of deforestation and forest degradation were verified with visual analysis using satellite images. If deforestation is confirmed in the visual assessment and by PRODES data, they were used to estimate GHG emissions due to deforestation in the project area (ADefPA,i,u,t) or activity transfer leakage (ADefLK,i, u,t) in the project scenario. If DETER data is not confirmed by PRODES, but is verified with visual analysis using satellite images, it used to update forest cover reference maps and therefore also counted as deforestation in the project area or transfer leakage of activities in the project scenario. DETER data has high temporal resolution and lower spatial resolution than PRODES data, which makes it suitable for generating deforestation alerts, which can be used to guide prompt BRC responses. Likewise, Global Forest Watch alerts are used for this purpose and with a better spatial resolution (10 m). The degraded forests detected up to the project start date were disregarded by the BRC when preparing the first forest benchmark map. In this sense, the maps are derived from the land use and land cover classification provided by Mapbiomas Collection 8 for the Amazon Biome. In this instance, the global accuracy[15] is approximately 96%.

[14] Downloads – Terrabrasilis (inpe.br)

[15] MapBiomas Global Accuracy

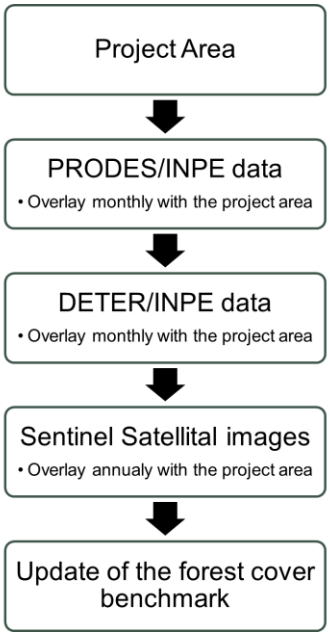


Figure 7. Monitoring steps flowchart.

3.1.3.5 Interpretation and analysis

PRODES data was used to monitor project area deforestation (ADefPA,i,u,t) and activity shifting leakage (ADefLK,i,u,t) in the project case. Net carbon stock change as a result of deforestation in the project case in the project area and leakage belt were calculated taking in consideration the net carbon stock changes in all pools in the project case (ΔCpools,Def,u,i,t), according to VMD0015 v2.2 equations 03 to 06 (see section 3.2.2.1) and VMD0009 v1.3 equations 01 to 07 (see section 3.2.2.2).

DETER data and supervised observation were used to monitor forest degradation (ADegW,I, ADistPA,i,t, Aburn,i,t) in the project case. Net carbon stock change as a result of degradation in the project area in the project case were calculated taking in consideration the extraction of trees for illegal timber or fuelwood and charcoal (ΔCP,DegW,i,t) and selective logging of FSC certified forest management areas (ΔCP,SelLog,i,t), according to VMD0015 v2.2 equations 07 to 18 (see section 3.2.2.1).

An initial participatory rural appraisal (PRA) of the communities inside and surrounding the project area was performed to determine if there was the potential for illegal extraction of trees to occur. Considering GPD initial scope, it remained characterized that all families living inside the project area explore the forest for timber and fuel wood, what shall be considered as a low impact activity driven by subsistence purposes. No timber or fuel wood economic activity was perceived by BRC. In this

sense, BRC assumed that extraction of trees for timber or fuelwood is a constant in PAIs where community presence is perceived.

The biomass carbon of trees cut and removed through degradation process (CDegW,i,t) were monitored through direct measure in PAIs #2-5 and validate using LiDAR surveys as also reported in the second monitoring report and in Apppendix IV and Appendix V "Monitoring 3 2023". In the case FSC certified forest management operation is happening at a specific PAI, the volume of timber extracted (VEXT,j,z,i,t), the length and width of skid trails in stratum (LSKID,i,t, WSKID), the area of roads and logging decks (AROAD,i,t, ADECKS,i,t) will be taken from annual operating plans, exploration authorizations and post exploration reports. In this sense, no action of timber extraction will be taken along the project lifetime and not accounted during this monitoring period.

According to common practice in Amazonia, it is assumed that fire is used for land clearing after deforestation in the project area, in the baseline and project scenarios. Non-CO_2 emissions due to biomass burning are considered according to VMD00015 v2.2 equation 30 and VMD0013 v1.2, equation 01 and 02 (see section 3.2.2.1).

3.1.3.6 Data Archiving, Organization and responsibilities

The monitoring report provided all relevant information on the time series of data on land use-change, and GHG emissions in the monitoring report, considering data sources and processing protocols, data classification and accuracy assessment, following VMD0015 v2.2. Digital files were stored in BRC database and archived at BRC headquarters. Security data protocol followed the most recent federal law for personal data privacy, including in digital media, by a natural person or legal entity governed by public or private law, with the aim of protecting the fundamental rights[16]. In this sense, since beginning of 2022 the BRC structured a technology of information structure to enhance and implement two-step verification tasks, internal data security protocols and personal qualification routines as a concern of protecting corporative and personal data privacy.

BRC technical staff is headed exclusively by professionals with more than 10 years of experience in monitoring and certification of forest carbon projects. In addition, BRCarbon, operates with more than 30 professionals and technics that cover Project Management, Social, Biology, Engineering, GIS, advocacy and Communication areas. Considering the monitoring tasks previously

[16] L13709 (planalto.gov.br) – Law Nº 13,709, 14th August of 2018 (in Portuguese “Lei Geral de Proteção de Dados Pessoais (LGPD)”).

described, BRC headquarter structured a geospatial laboratory (called "LabGEO"). The responsibilities of the team involve multidisciplinary attributes such as:

- Definition of project boundaries and eligible areas
- Monthly deforestation alerts within project areas and leakage
- Development and enhancement of deforestation alert systems
- Supervised analysis of high-resolution satellite imageries classification for LU/LC process
- Detection of GHG emissions from wildfires
- Development of forest cover benchmark map and global accuracy of land changes classification.

For optimal quality control of processes, procedures are validated by an independent third party, a person distinct from the original analysts, from the same team or different team (this process is constant under development and validation). The role of this third part is to establish a systematic review of analysis quality, ensure accuracy, and offer guidance on reporting. Subsequently, the information is reported along with comprehensive historical calculation records and detailed documentation to facilitate reproduction by an external party outside BRC. For geospatial analyses and quantification of primary biomass stocks (carbon pools), available formats include: a) Appendices or reports documents outlining procedures and data characteristics used in the analysis, encompassing all statistical parameters and the required accuracy threshold (*.PPT, *.DOCX and *.XLSX file formats); b) Geospatial data essential for analysis, including codes applicable in the Google Earth Engine environment or written in the R language applied within the RStudio software (*.TIF for rasters, *.SHP for shapefiles and *.R for R script code). In this sense, the final products include spreadsheets in which access essential external raw data that feeds the calculation workflows and textual documents describing all the applied steps (e.g.: Appendix IV and V, calculus table spreadsheets for GHG emissions and monitoring of deforestation, respectively). To fill a gap, BRC has initiated the development of a database structure to enhance transparency in reporting and sharing information within a GISsql environment (not finished yet). Moreover, there is a preference for the use of open-source or freely distributed software formats (e.g., QGIS, GEE, RStudio, etc.) and other formats of interactiveness in R language analysis resembling a DMRV platforms (e.g. RMarkdown documents for LiDAR estimates reproducible analysis).

3.1.3.7 Estimation of Ex-post Net Carbon Stock Changes and GHG emissions

Ex-post estimates are performed according to the methodological procedures described in section 3.1.2. The technical description of the monitoring task and an overview of data collection procedures are described in section 3.1. All data collected are described in section 3.1, 3.1.1 and 3.1.2. Sections 3.1.1 and 3.1.2 also brings information on the applicable quality control and quality assurance procedures.

3.1.3.8 Project Forest Cover Benchmark Map

The following section demonstrate the Forest Cover Benchmark Map for the monitoring period, from January 1, 2023, to December 31, 2023.

The monitoring report for this period includes a map illustrating the forested areas within the project site at the beginning of each monitoring period. Any forested areas that have been cleared within the project site during this monitoring period are highlighted in the benchmark map for PAIs #01-15 and Leakage areas for each monitoring event.

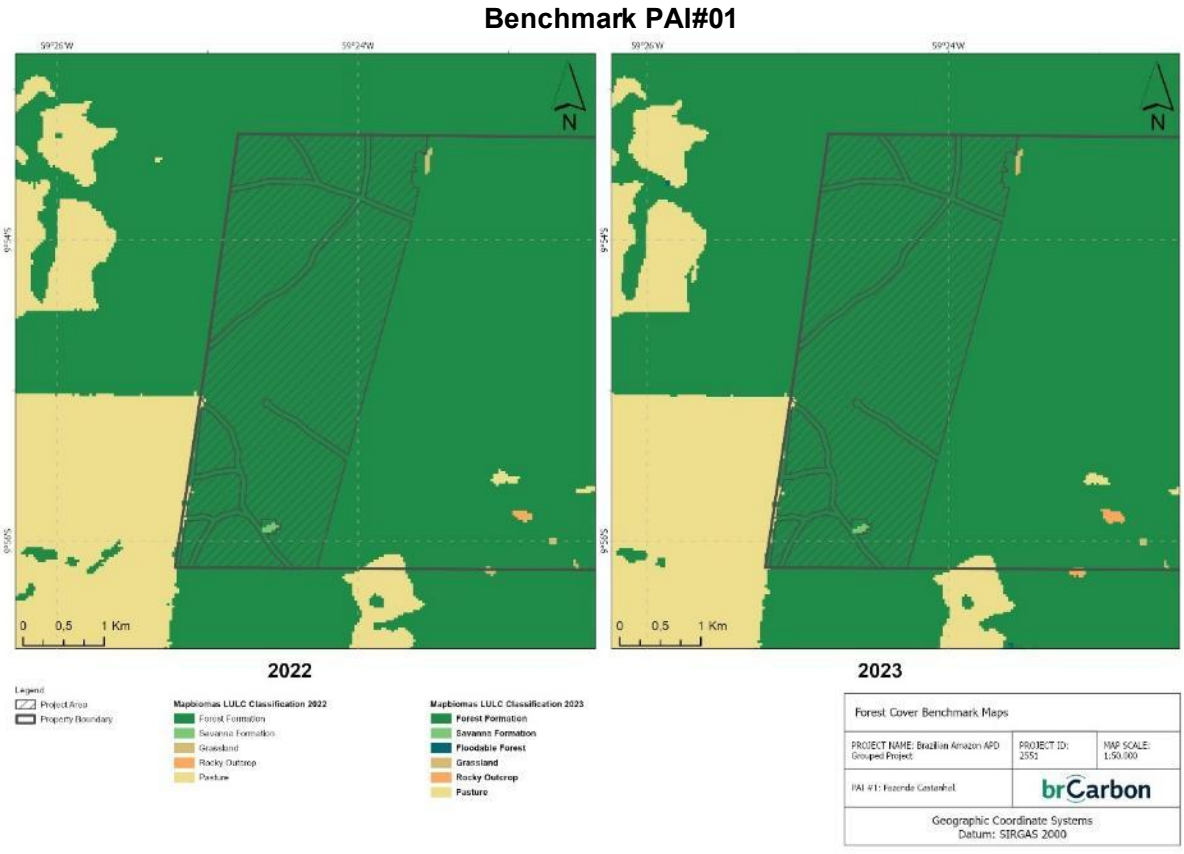


Figure 8. Project Forest Cover Benchmark Map at PAI #01.

Benchmark PAI#02

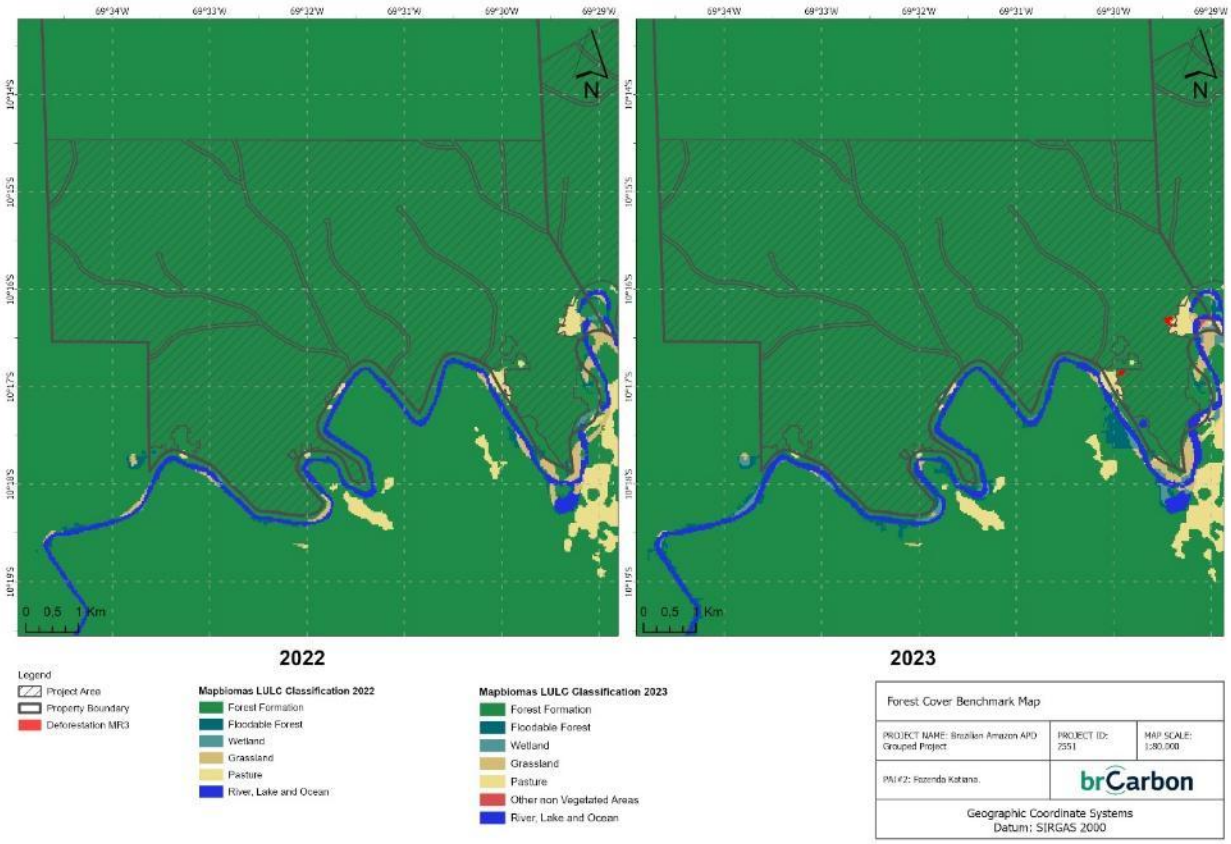


Figure 9. Project Forest Cover Benchmark Map at PAI #02.

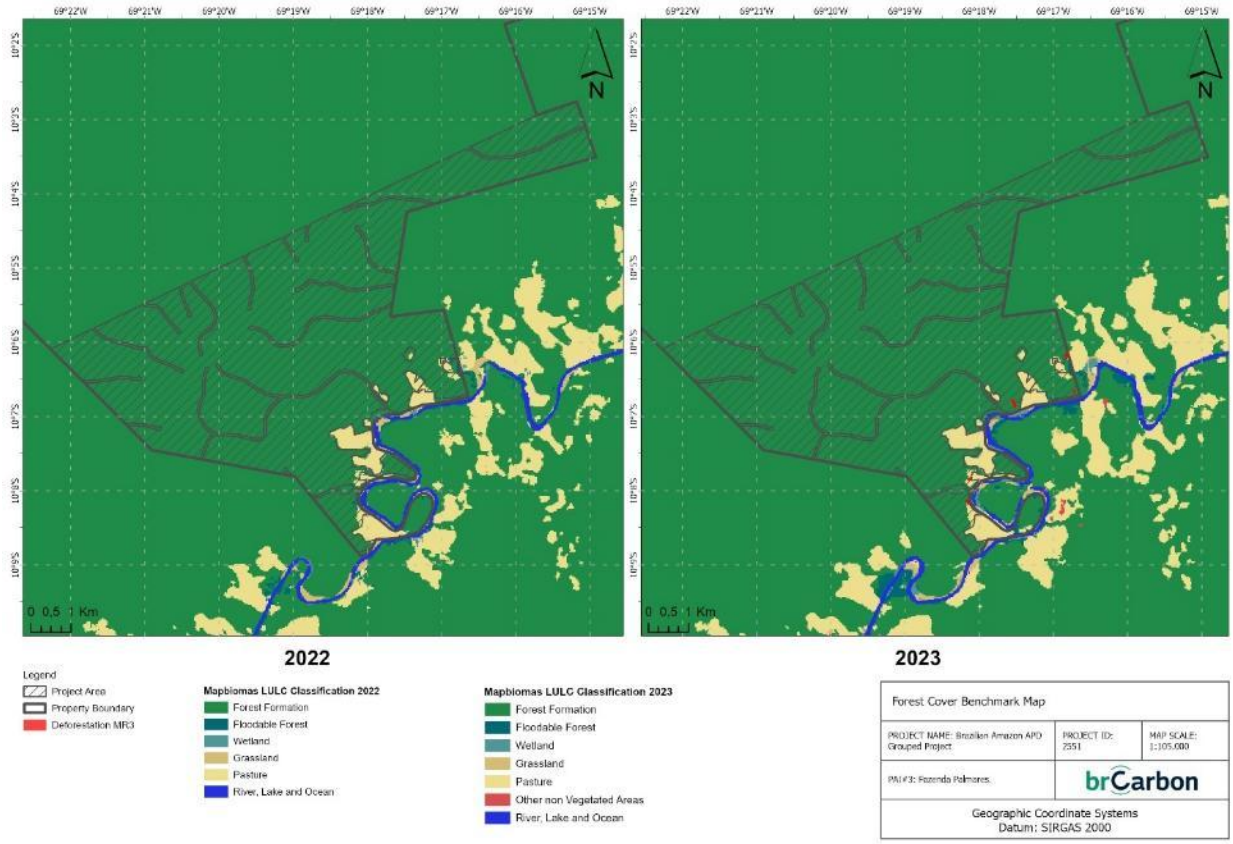


Figure 10. Project Forest Cover Benchmark Map at PAI #03.

Benchmark PAI#04

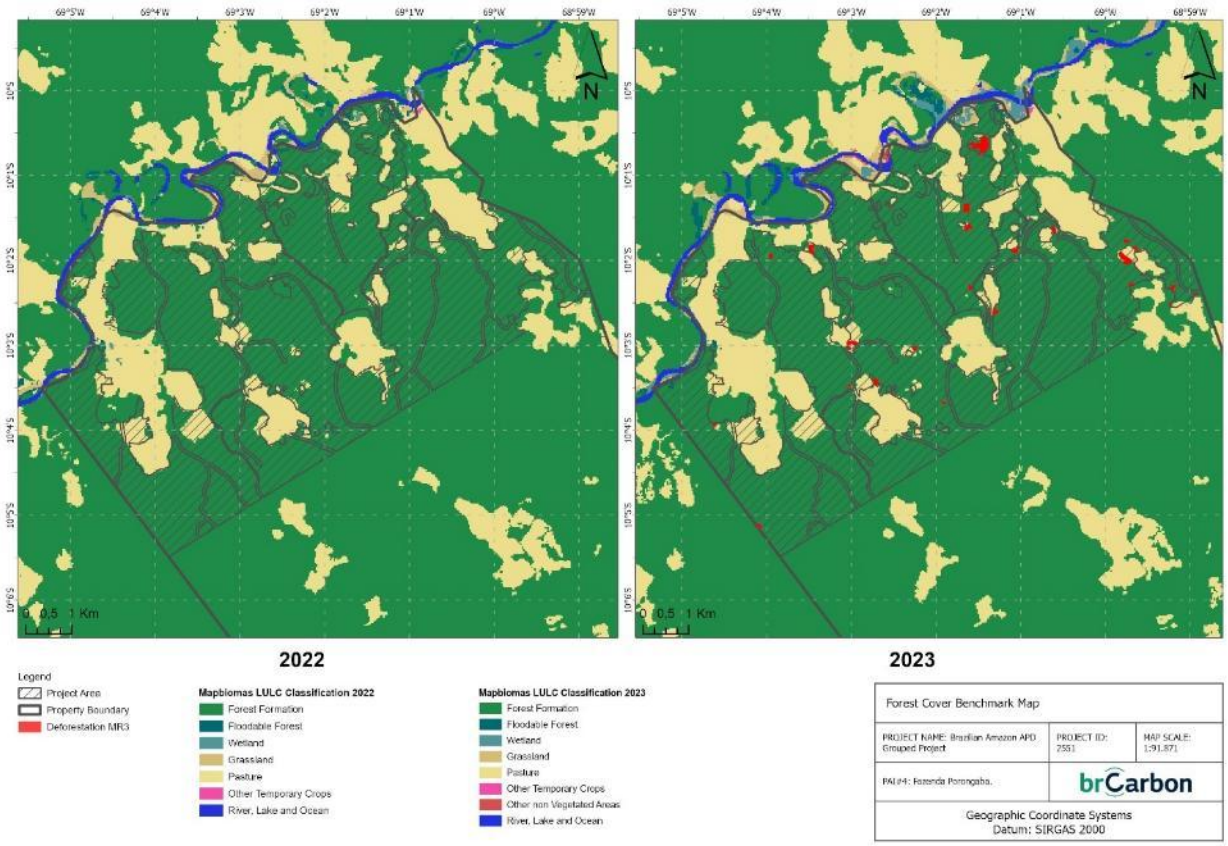


Figure 11. Project Forest Cover Benchmark Map at PAI #04.

Benchmark PAI#05

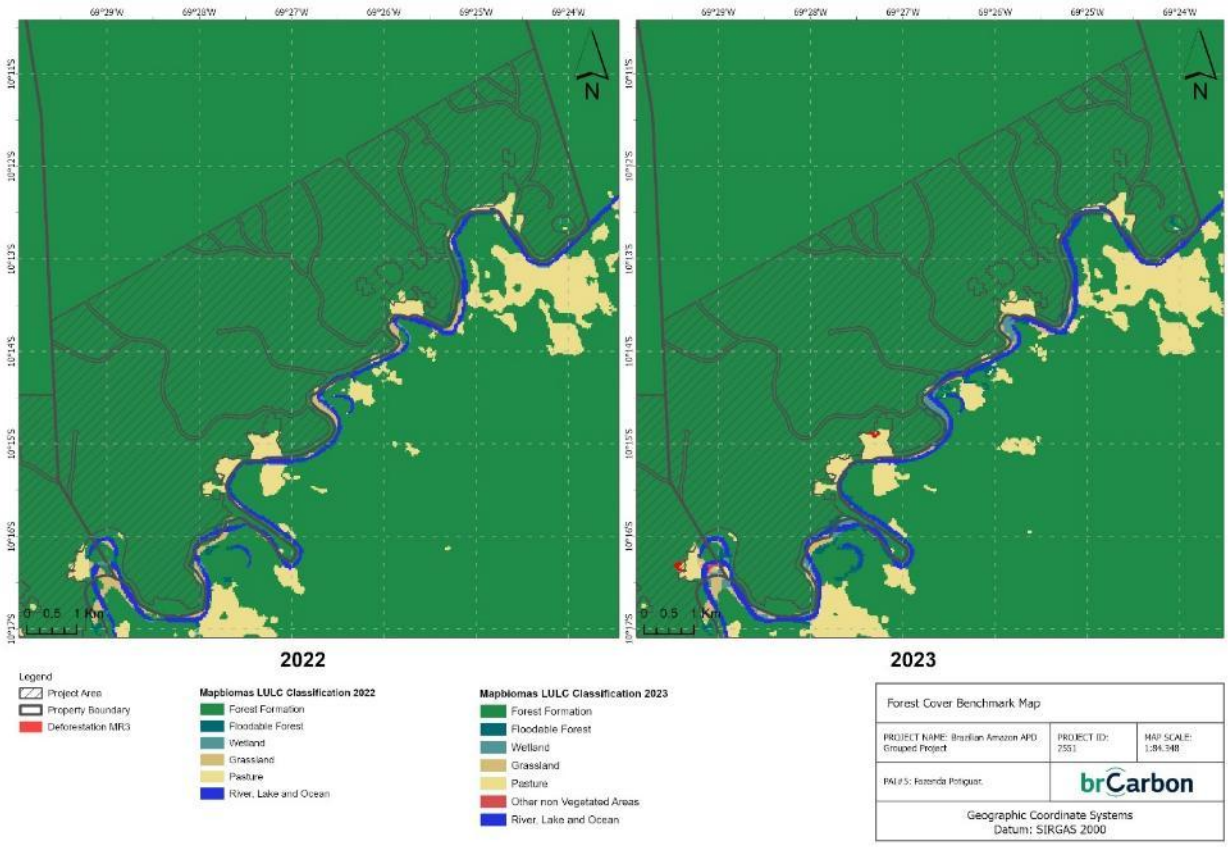


Figure 12. Project Forest Cover Benchmark Map at PAI #05.

Benchmark PAI#06

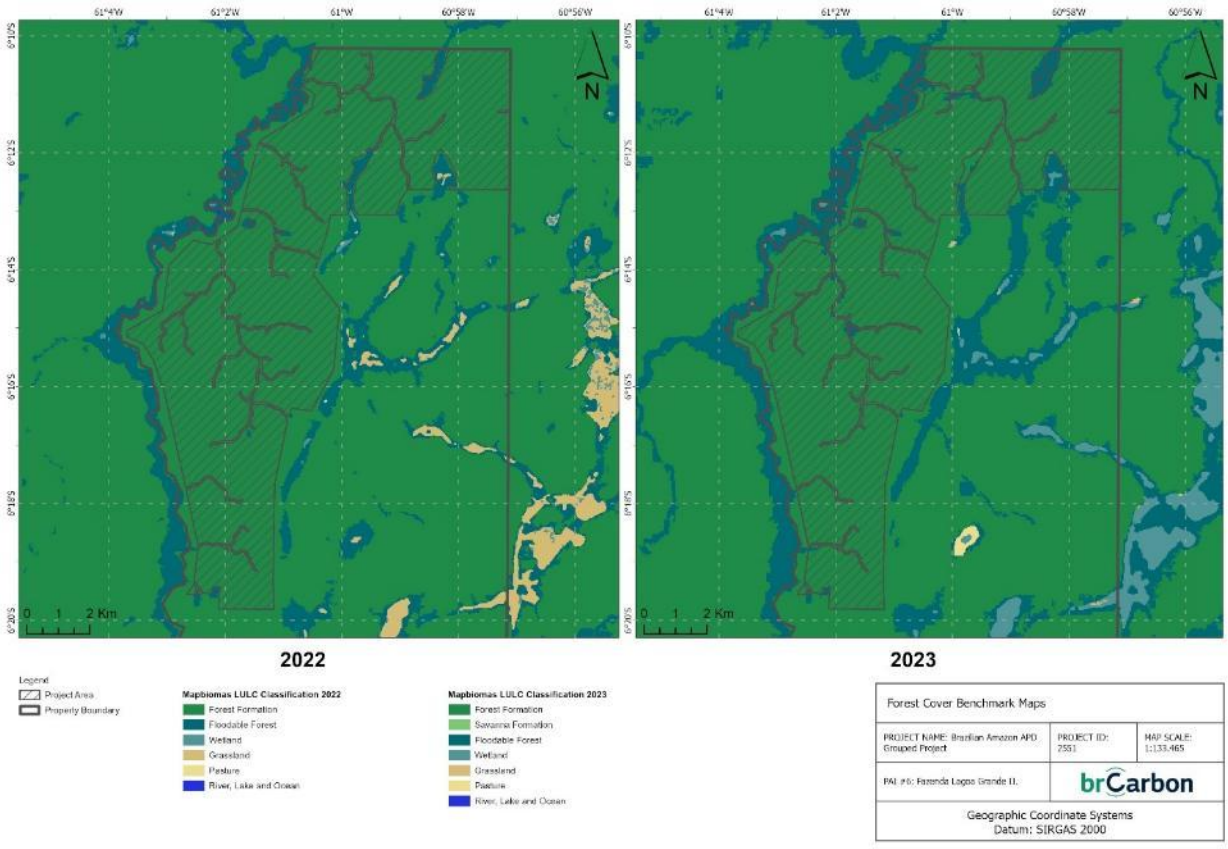


Figure 13. Project Forest Cover Benchmark Map at PAI #06.

Benchmark PAI#07

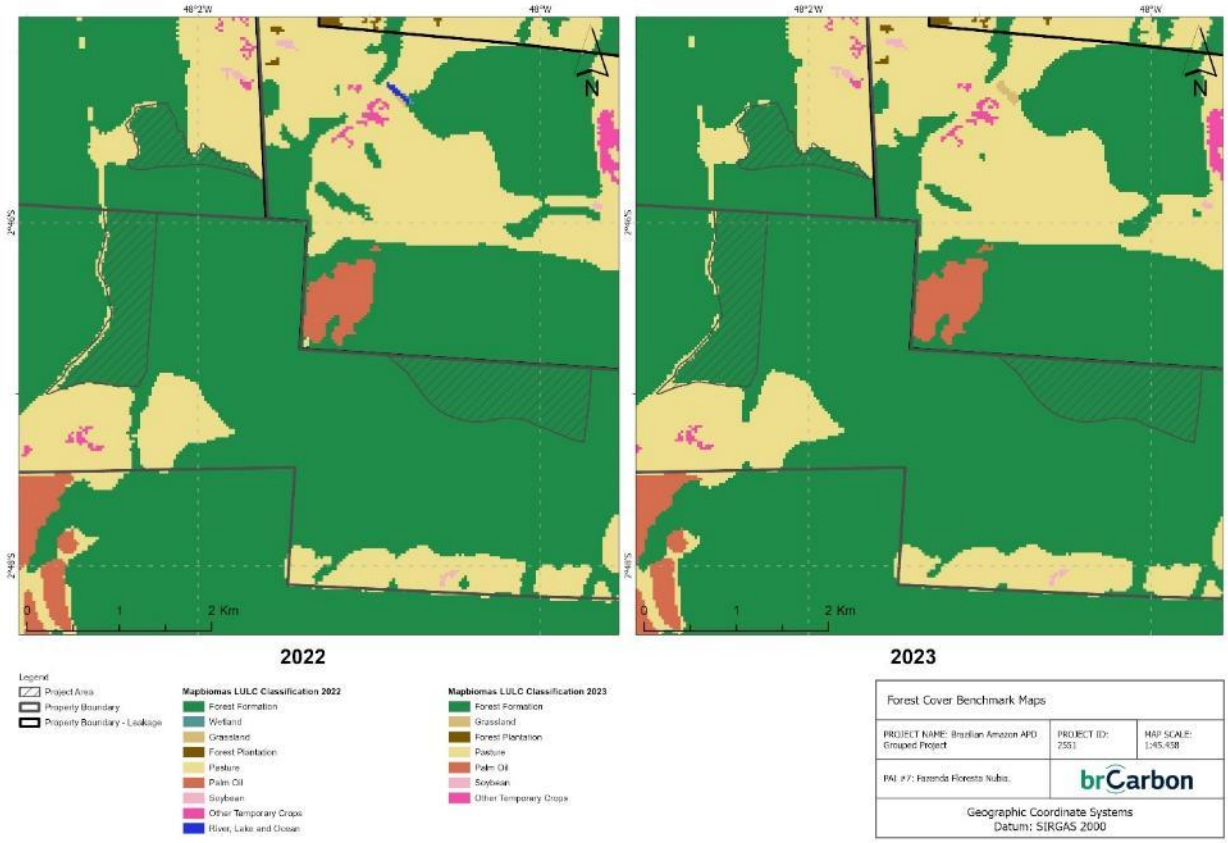


Figure 14. Project Forest Cover Benchmark Map at PAI #07.

Benchmark PAI#08

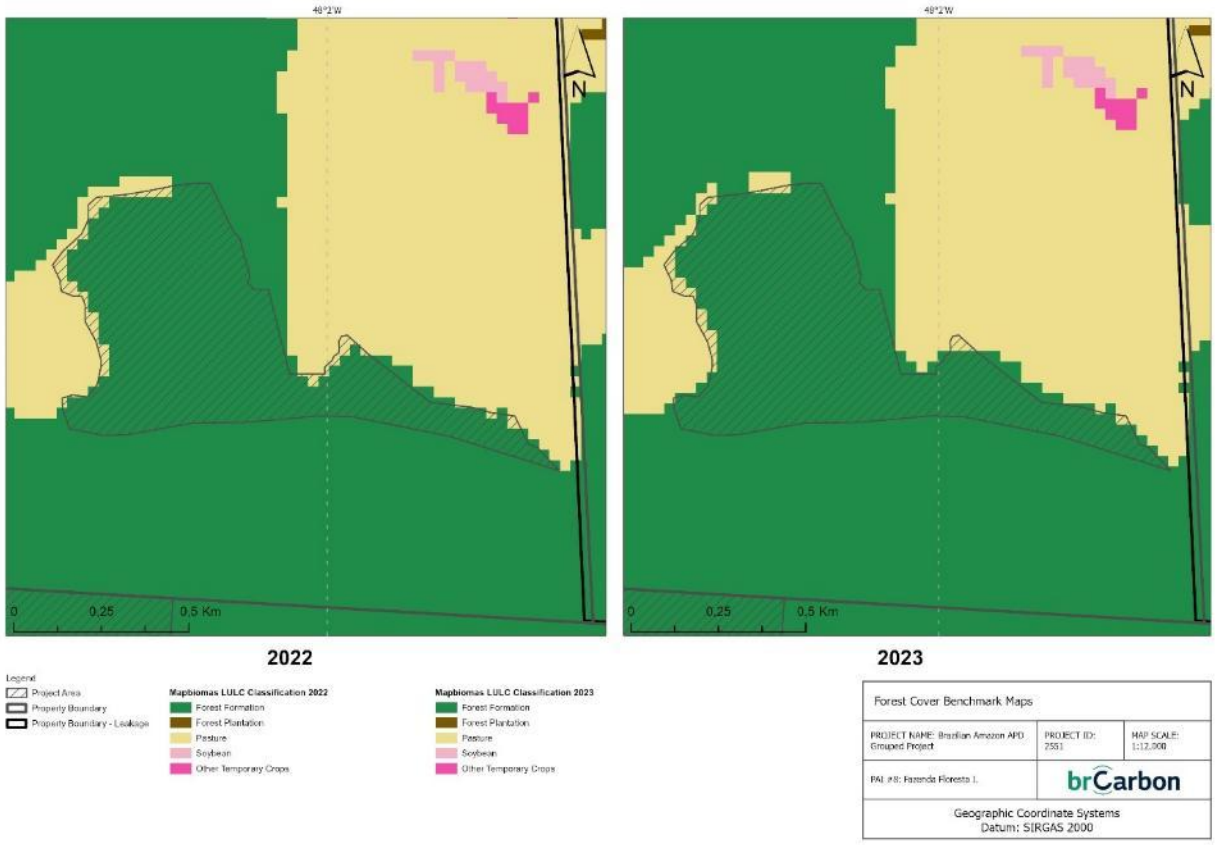


Figure 15. Project Forest Cover Benchmark Map at PAI #08.

Benchmark PAI#09

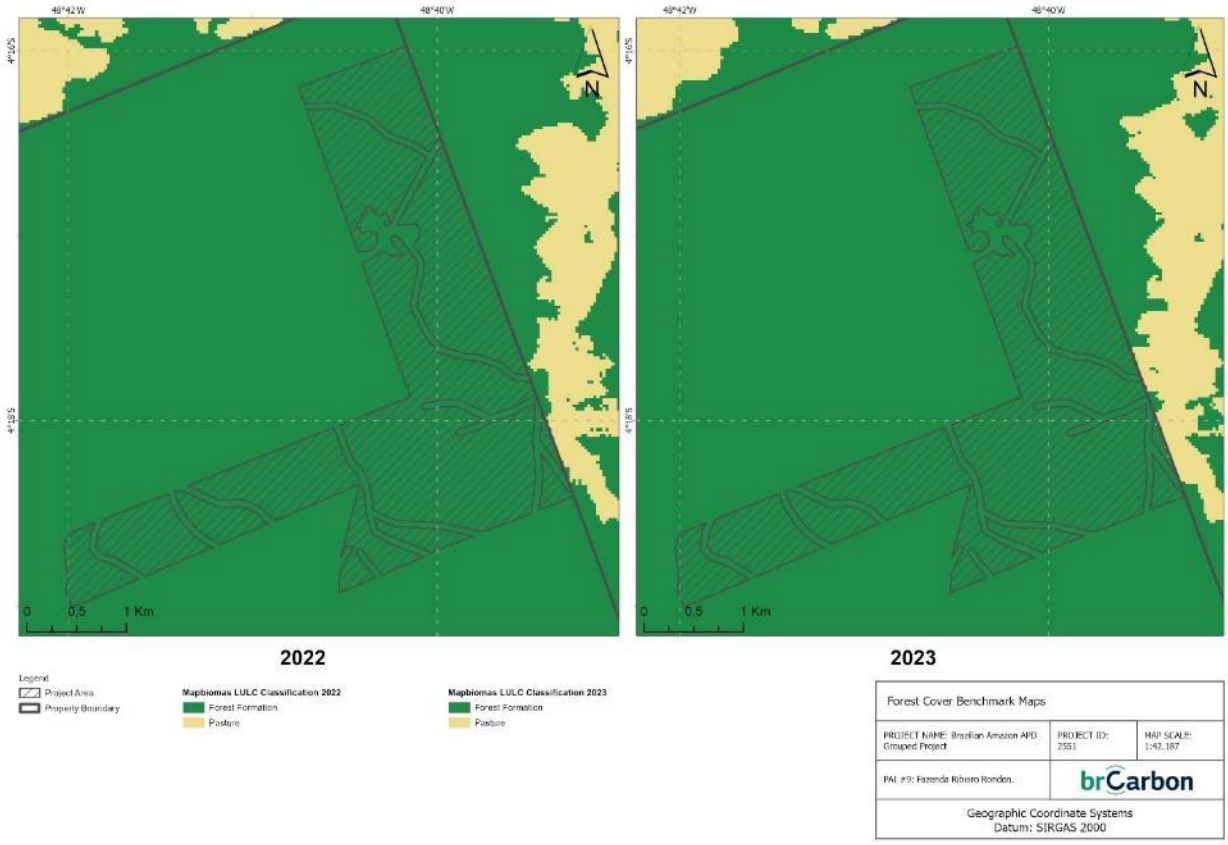


Figure 16. Project Forest Cover Benchmark Map at PAI #09.

Benchmark PAI#10



Figure 17. Project Forest Cover Benchmark Map at PAI #10.

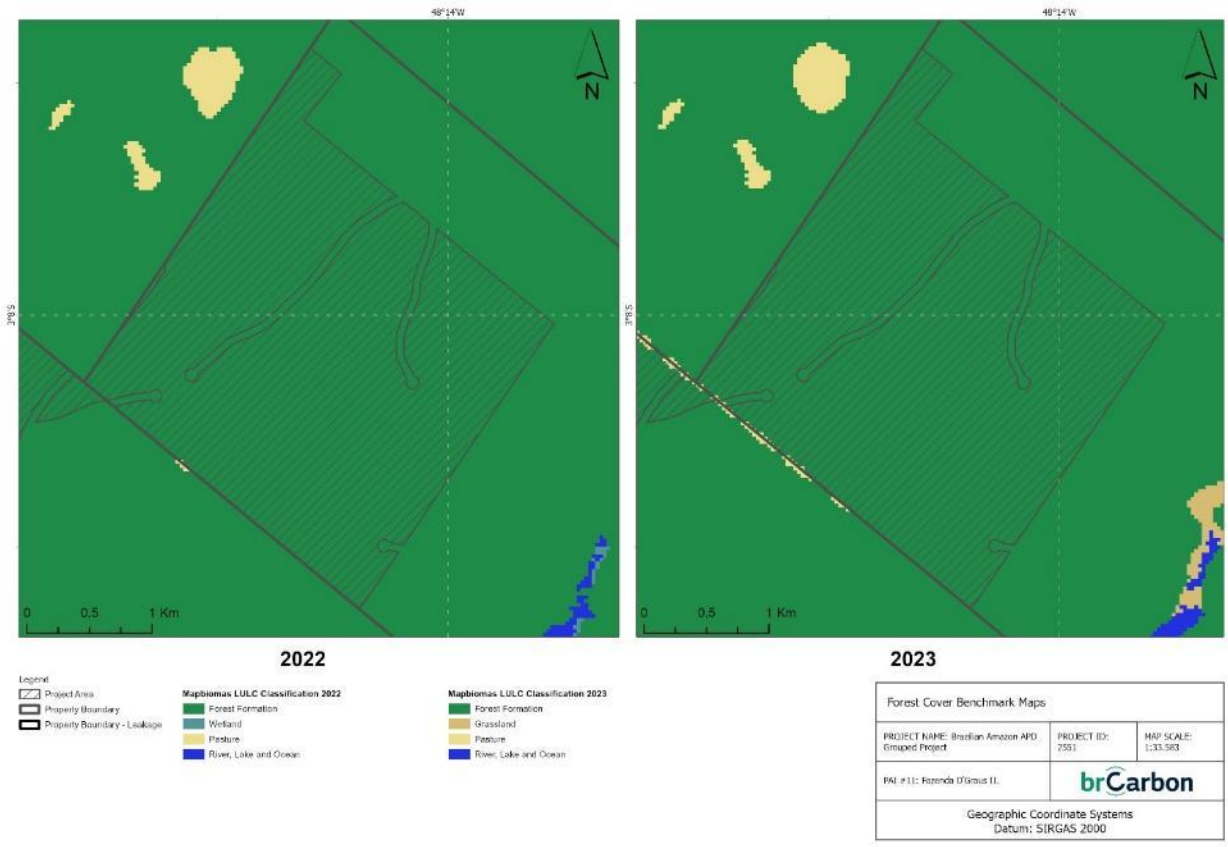


Figure 18. Project Forest Cover Benchmark Map at PAI #11.

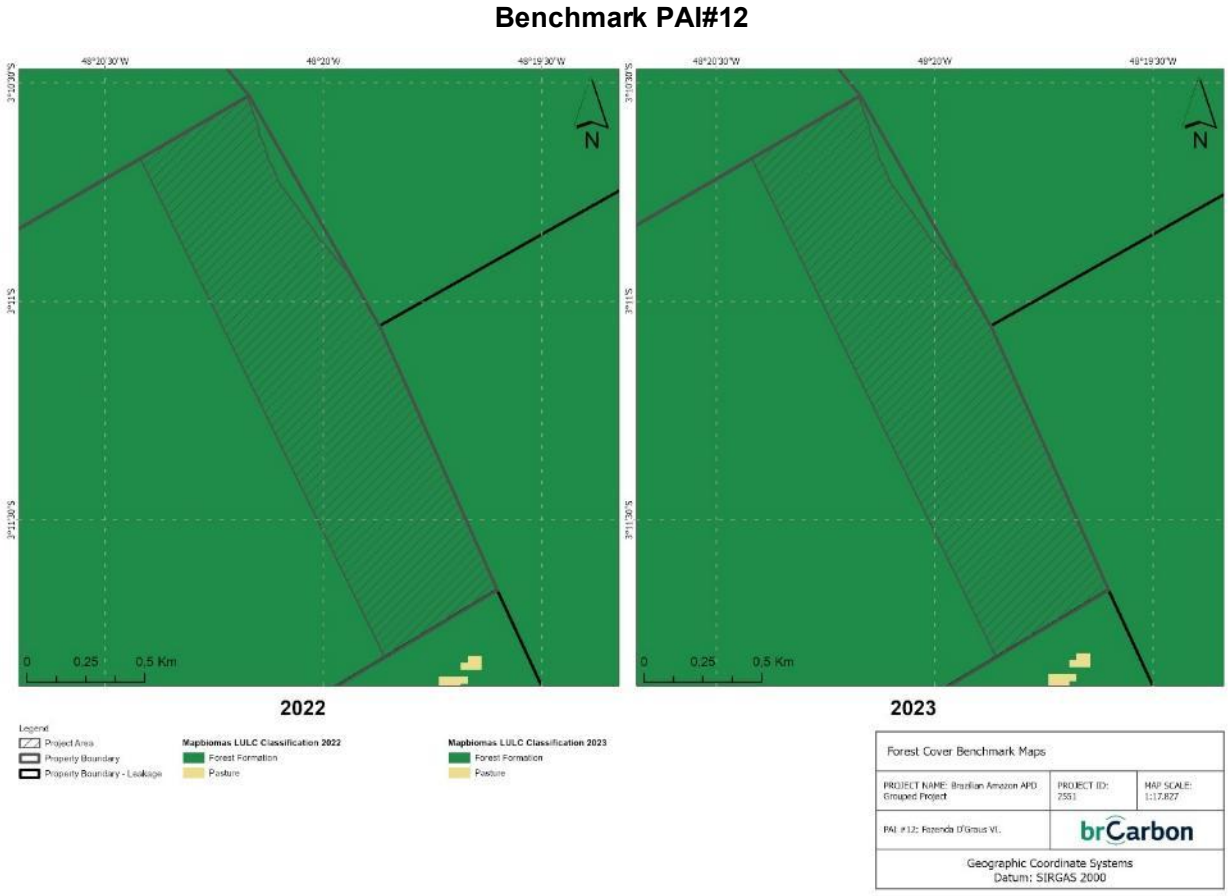


Figure 19. Project Forest Cover Benchmark Map at PAI #12.

Benchmark PAI#13

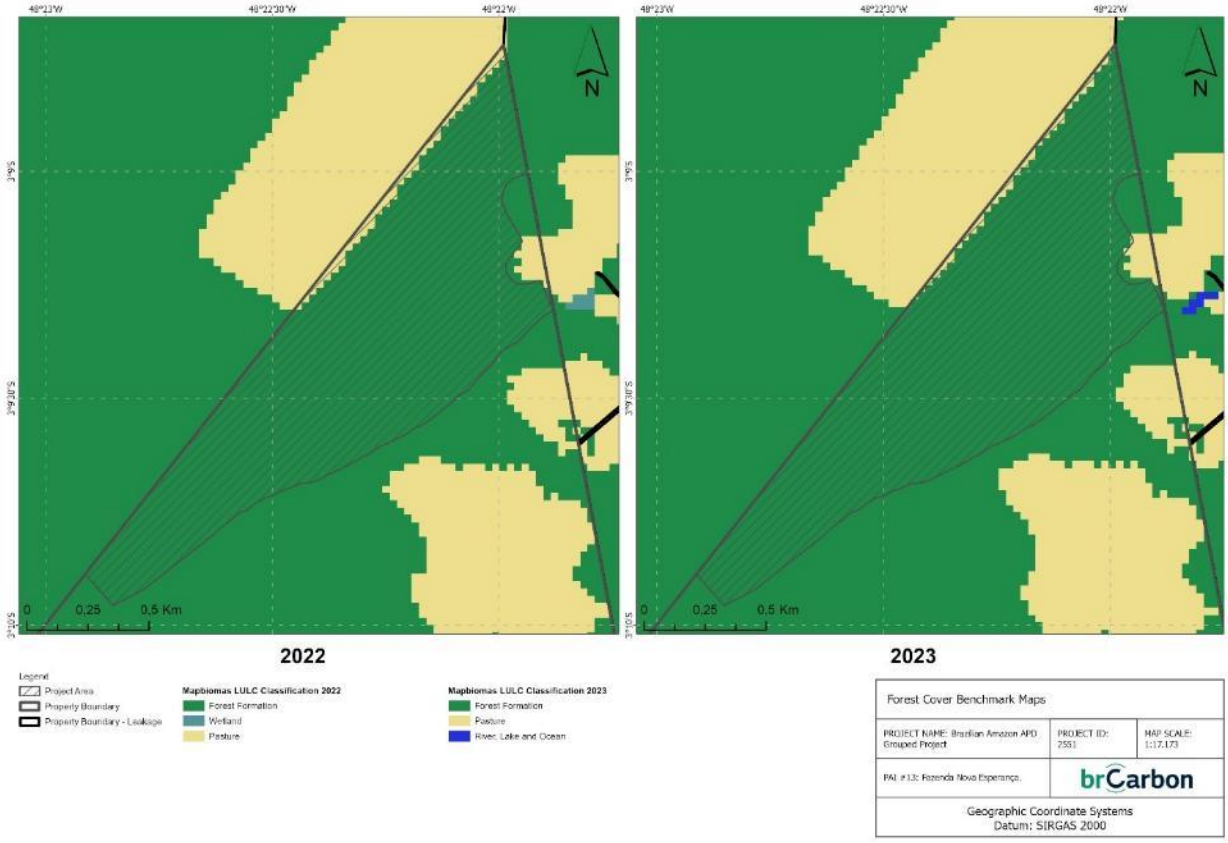


Figure 20. Project Forest Cover Benchmark Map at PAI #13.

Benchmark PAI#14



Figure 21. Project Forest Cover Benchmark Map at PAI #14.

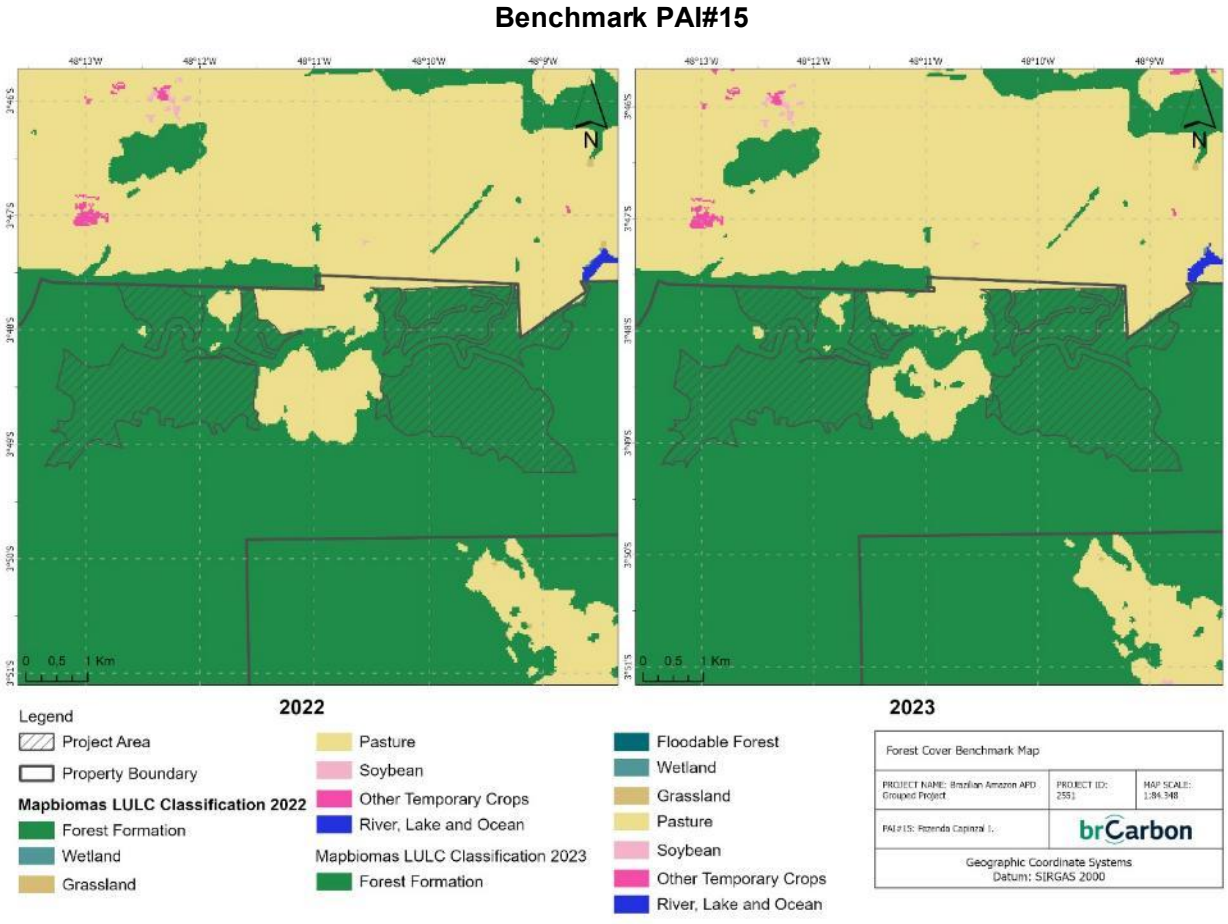


Figure 22. Project Forest Cover Benchmark Map at PAI #15.

The following figures, presents the Banchmark Cover Forest maps for the Leakage areas of PAIs #1 to #15. The maps with better resolution can be found in section 7 - APPENDIX: Forest Cover Benchmark Maps Details - Leakage

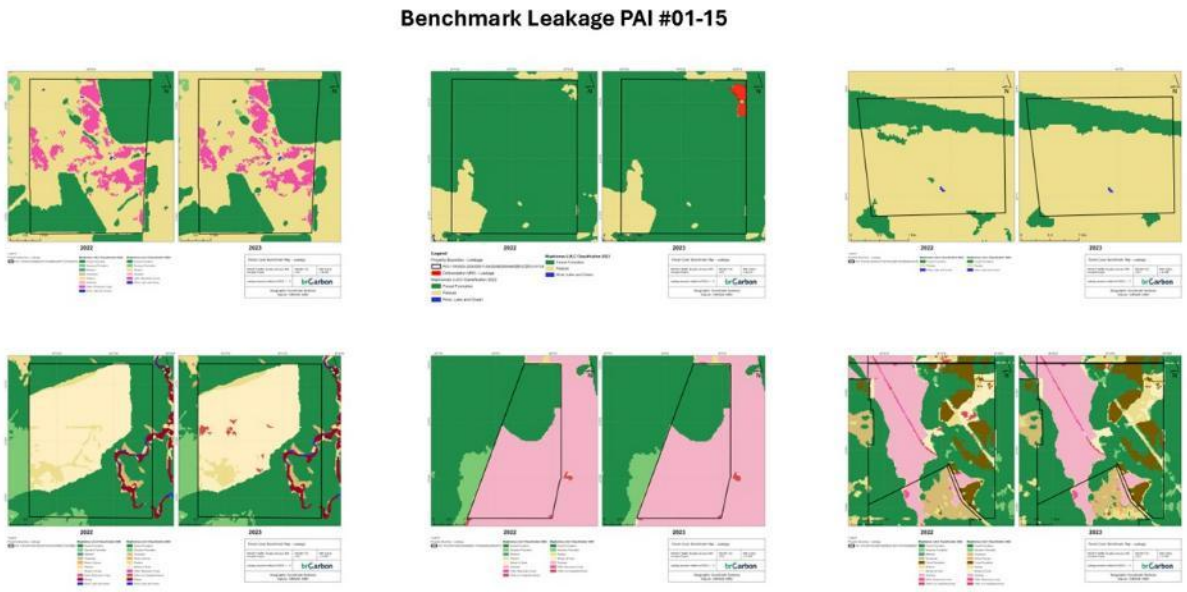


Figure 23. Project Forest Cover Benchmark Leakage Map at PAIs #1-15.

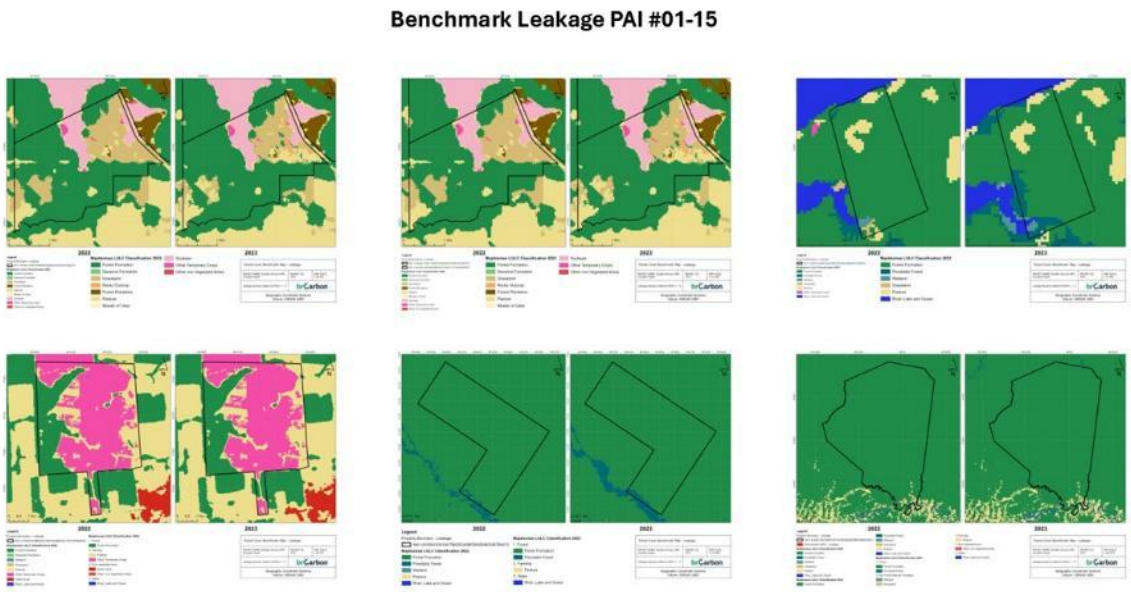


Figure 24. Project Forest Cover Benchmark Leakage Map at PAIs #1-15.

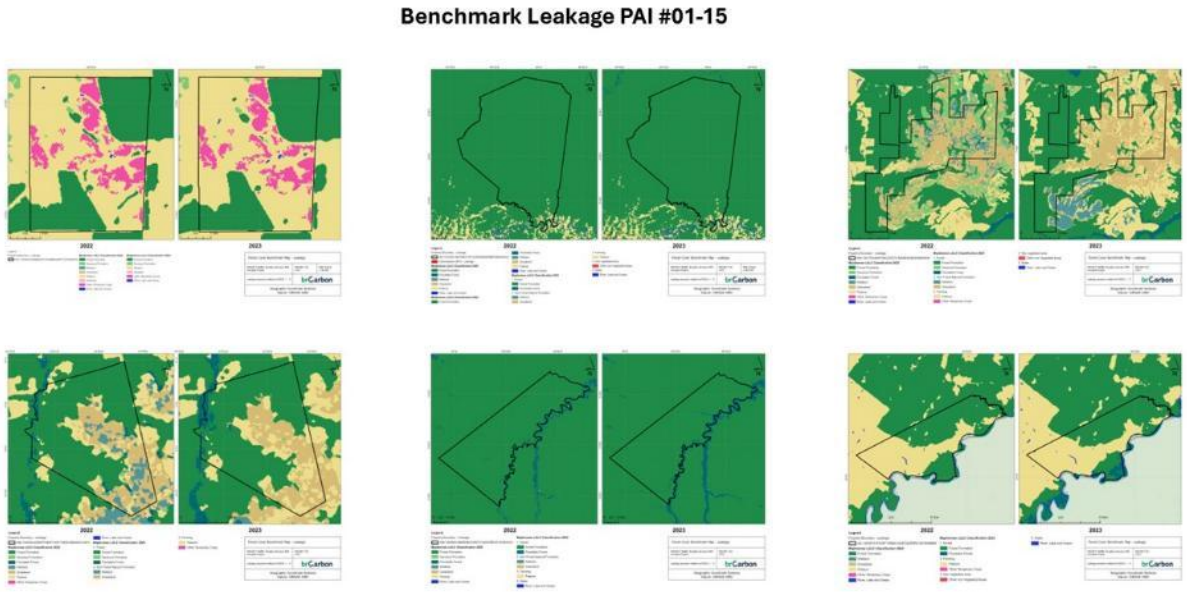


Figure 25. Project Forest Cover Benchmark Leakage Map at PAIs #1-15.

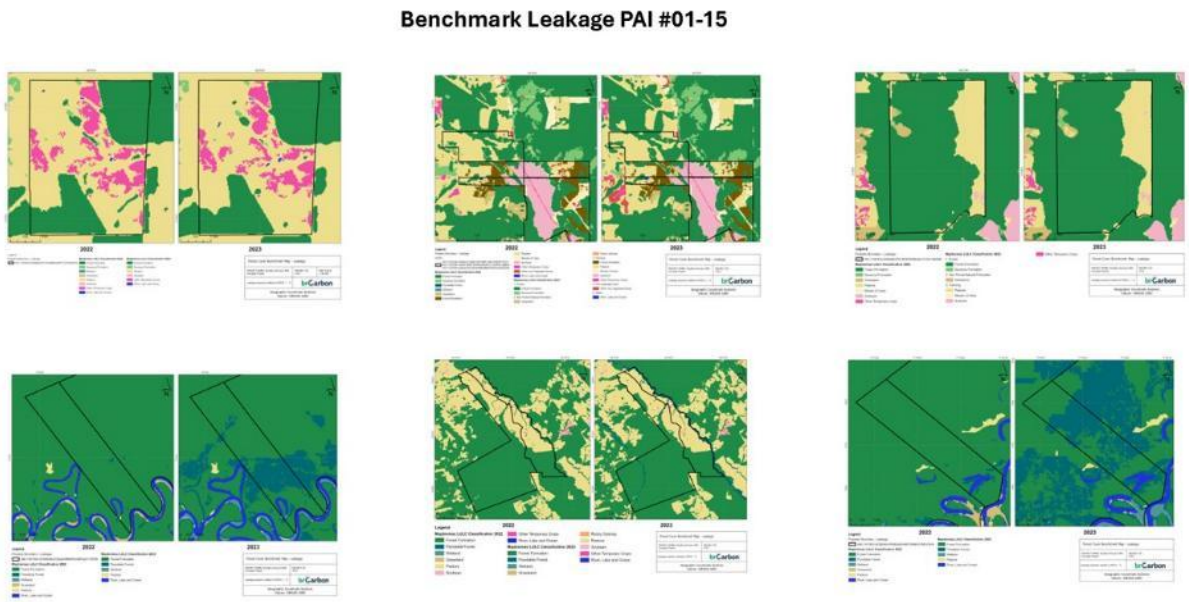


Figure 26. Project Forest Cover Benchmark Leakage Map at PAIs #1-15.

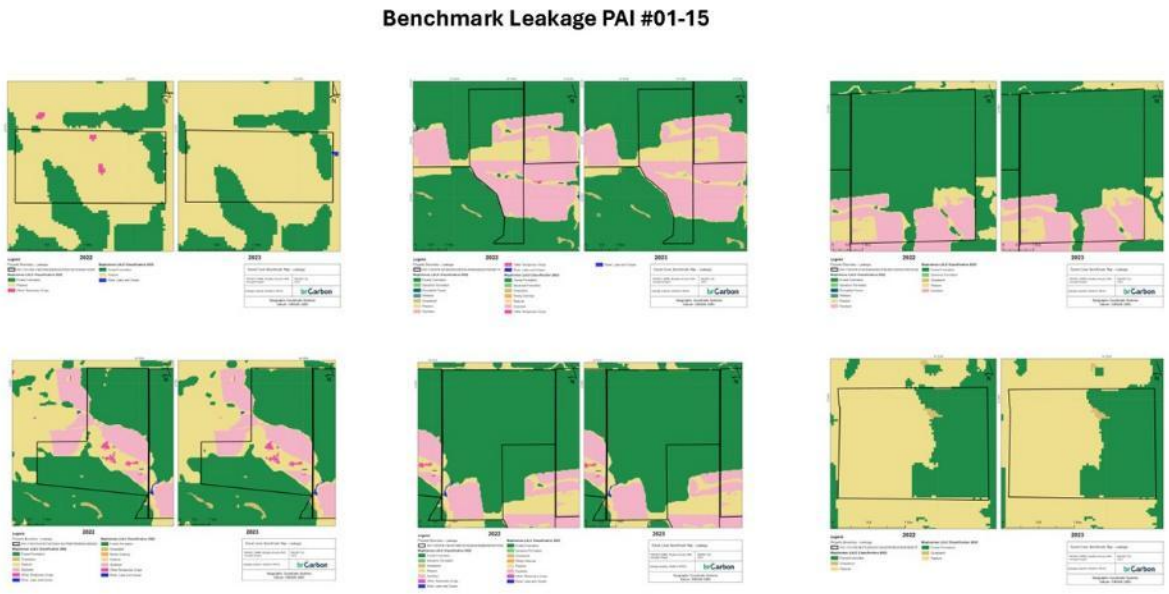


Figure 27. Project Forest Cover Benchmark Leakage Map at PAIs #1-15.

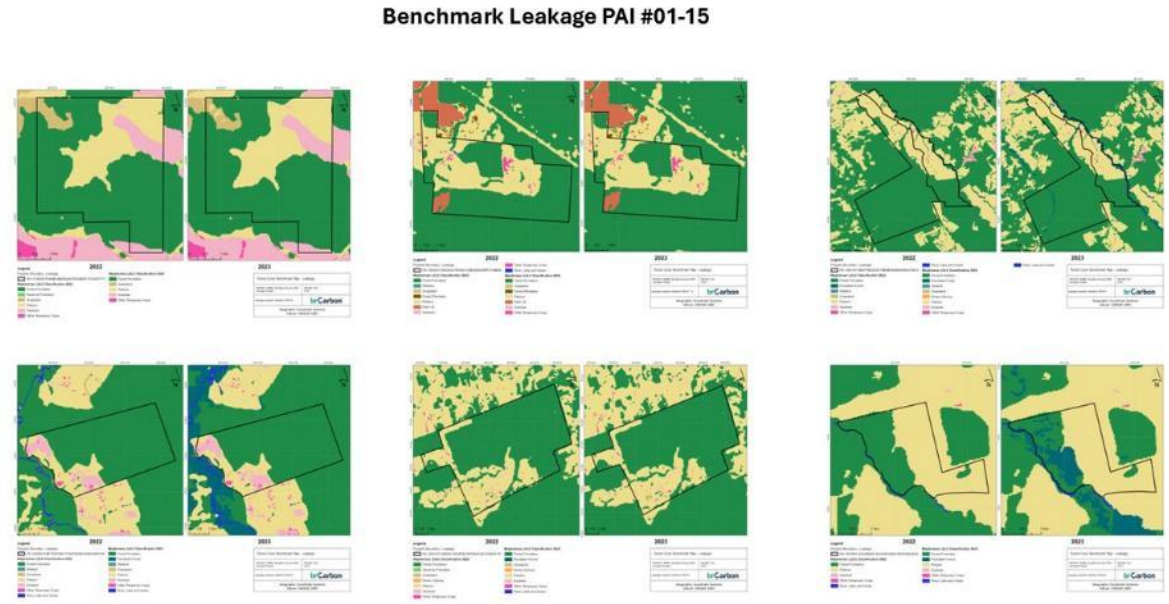


Figure 28. Project Forest Cover Benchmark Leakage Map at PAIs #1-15.

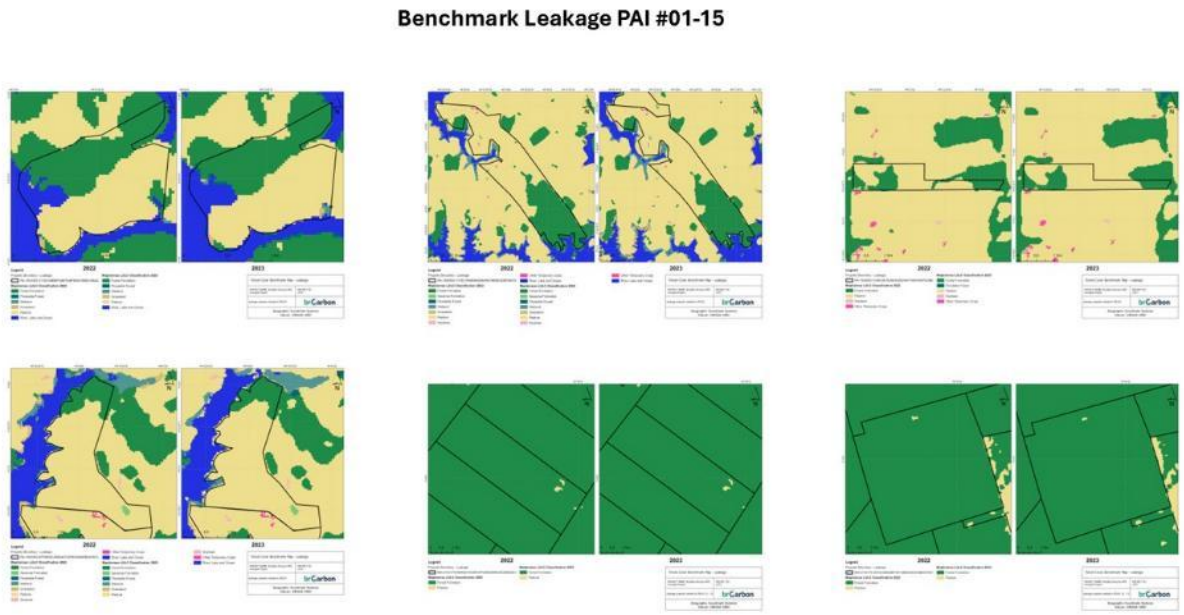


Figure 29. Project Forest Cover Benchmark Leakage Map at PAIs #1-15.

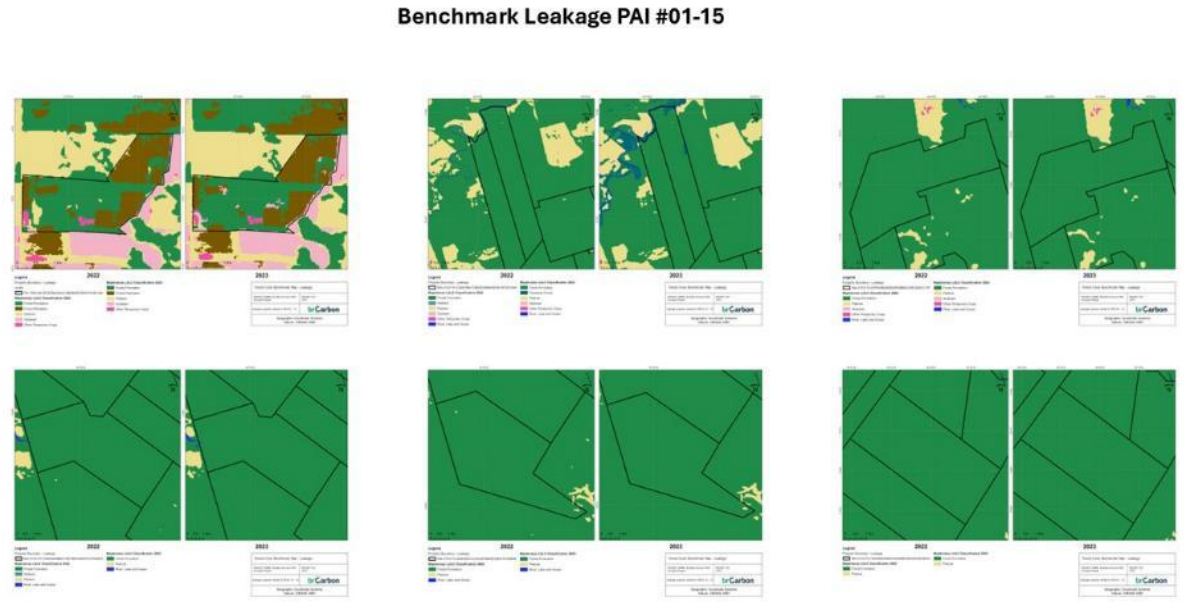


Figure 30. Project Forest Cover Benchmark Leakage Map at PAIs #1-15.

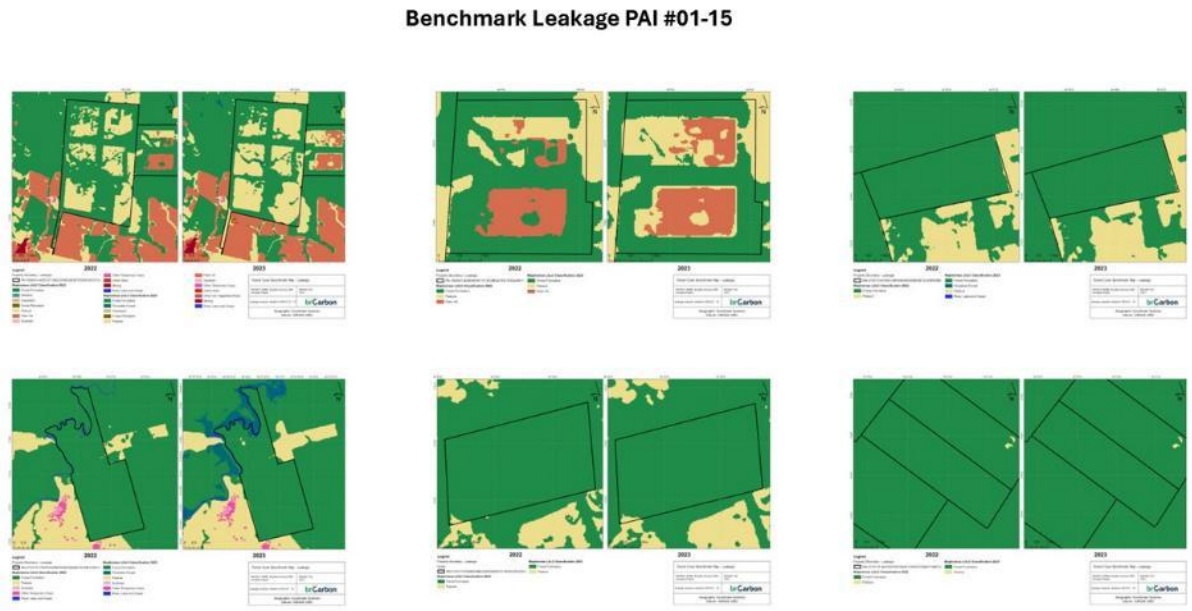


Figure 31. Project Forest Cover Benchmark Leakage Map at PAIs #1-15.

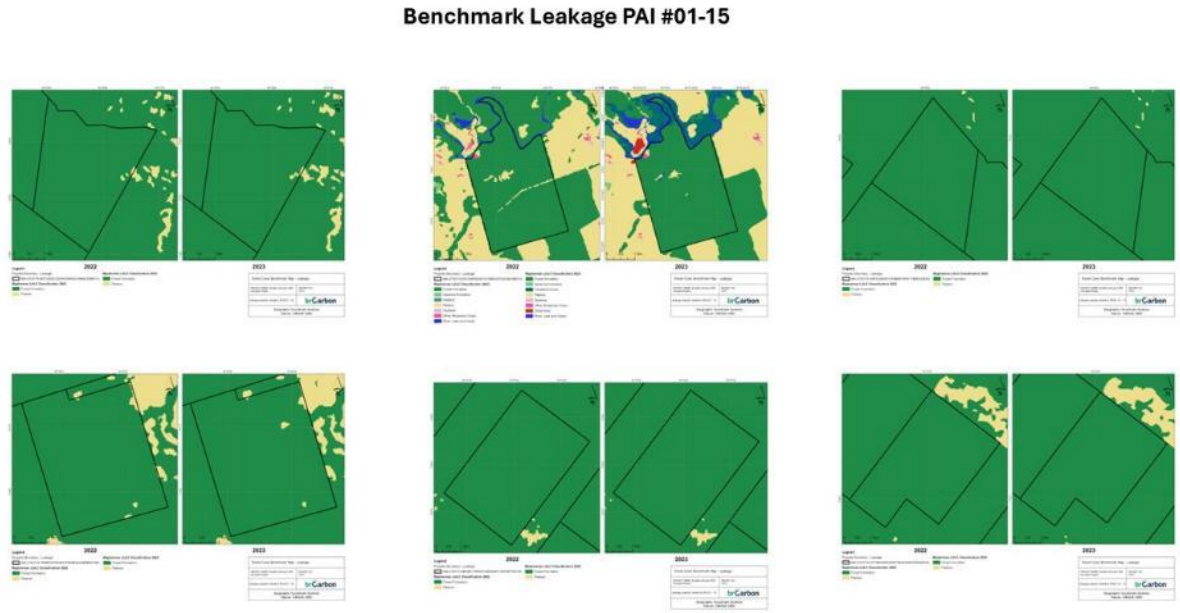


Figure 32. Project Forest Cover Benchmark Leakage Map at PAIs #1-15.

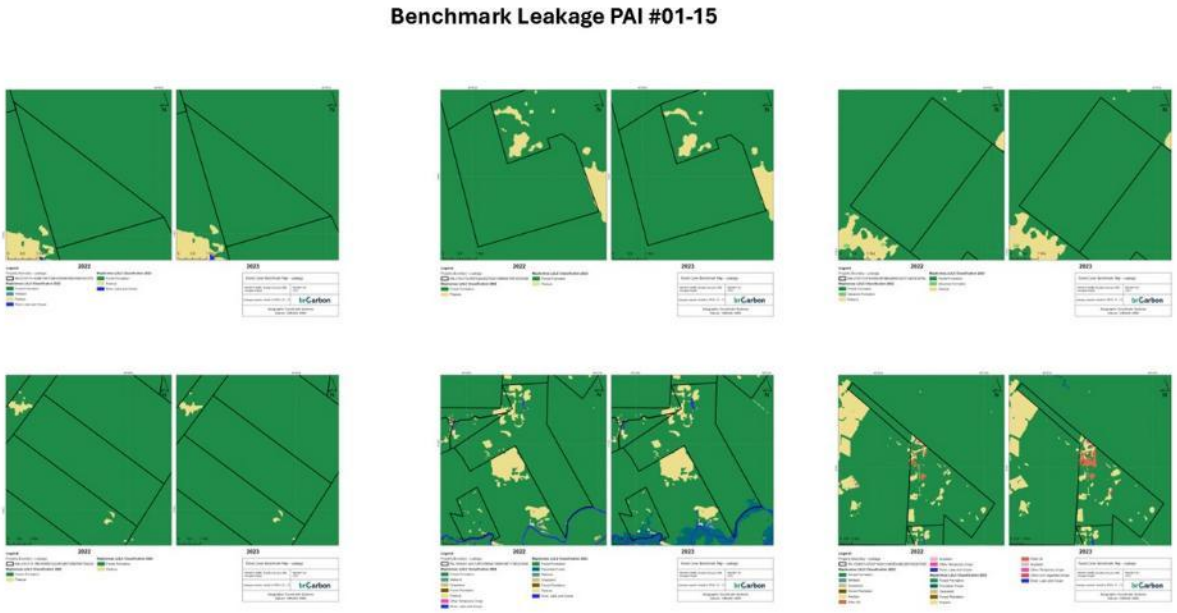


Figure 33. Project Forest Cover Benchmark Leakage Map at PAIs #1-15.

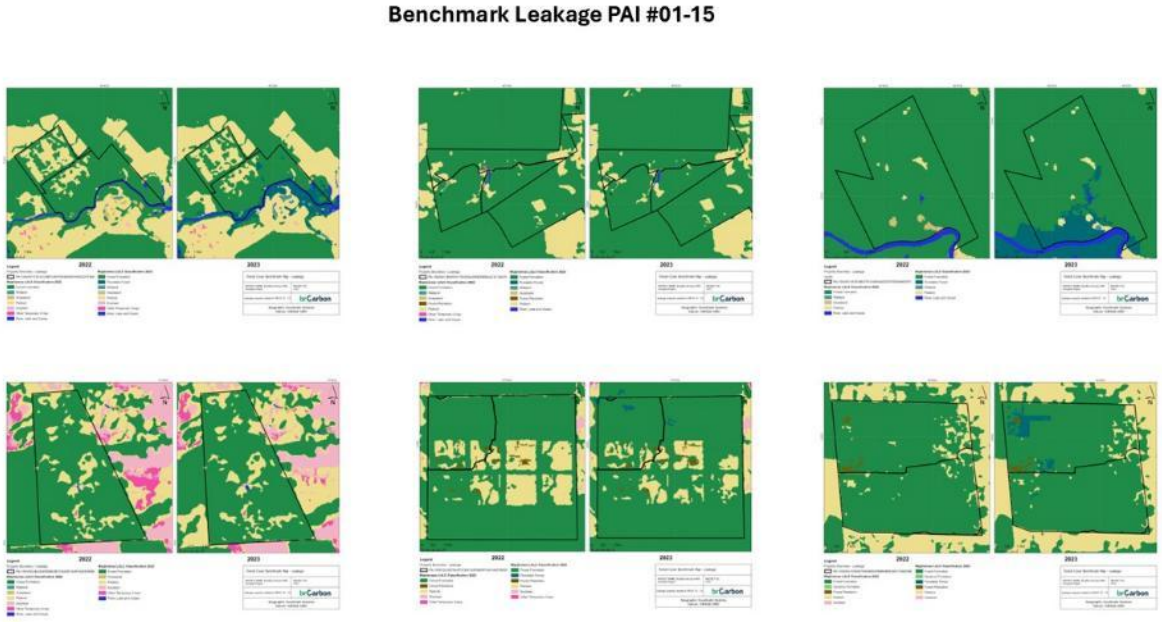


Figure 34. Project Forest Cover Benchmark Leakage Map at PAIs #1-15.

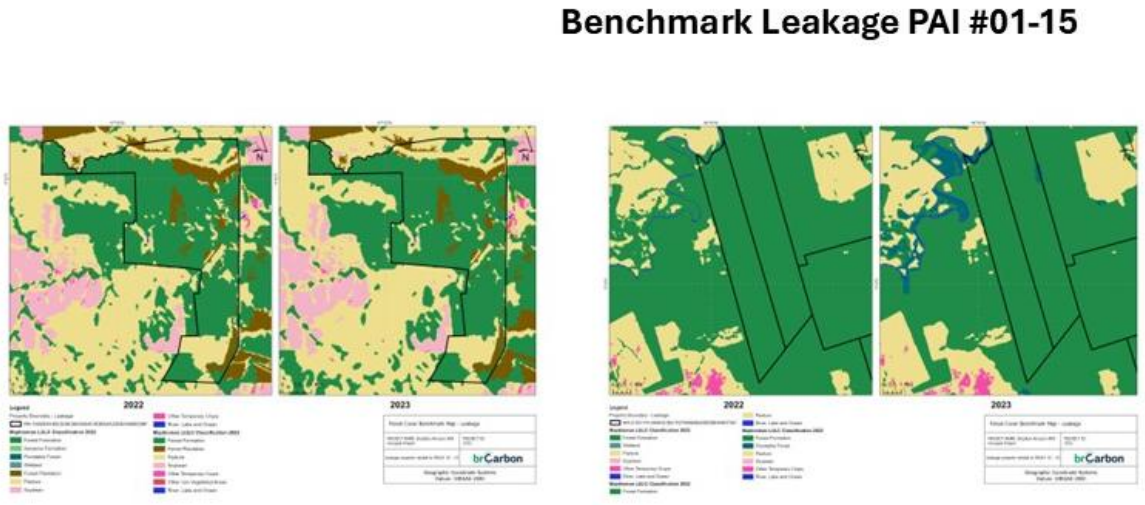


Figure 35. Project Forest Cover Benchmark Leakage Map at PAIs #1-15.

3.1.4 Dissemination of Monitoring Plan and Results (VCS, 3.18; CCB, CL4.2)

The plan for monitoring and its outcomes were accessible on Verra's website[17], including complete documents of the GPD and monitoring reports. Furthermore, the outcomes of the monitoring were presented at public meetings specifically organized for this objective during the stages of social engagement.

3.2 Quantification of GHG Emission Reductions and Removals

3.2.1 Baseline Emissions (VCS, 3.15)

3.2.1.1 Deforestation in Baseline Scenario

The area of deforestation (Aplanned,i) for new PAIs was defined according to an immediate site-specific threat of deforestation, as stated on section 5.1.2 of VMD006, v1.3, which is demonstrated by documentary proof of the following:

[17] https://registry.verra.org/app/projectDetail/VCS/2551

1) **Legal permissibility for deforestation**: the permissibility of deforestation is demonstrated for new PAIs through the application of environmental legislation in the country. According to the Brazilian forestry code (Law nº. 12,651 of May 25, 2012), rural properties in the Amazon biome need to preserve 80% of forest cover, which guarantees owners of rural properties the right to remove up to 20% of forest cover on their properties, for productive purposes.

2) **Suitability of project area for conversion to alternative non-forest land use:** To stabilsh the project area limits in each new PAI (Aplanned,i), a series of operation in GIS environment were performed to determine the project area. First, the PRODES database was used to define remaining forest areas within the property limits. Furthermore, the project proponent carried out stages of review and redefinition of previously established limits, using high-resolution images from Sentinel. This way legal permissibility the area of allowed deforestation is considered relative to total property areas including areas already deforested. Data from the PRODES system is the official data used by the Brazilian government to determine forest cover and monitor deforestation in Brazilian biomes. They are produced by INPE (National Institute for Space Research), which is considered a scientifically recognized source of data[18]

Suitability of new PAIs for conversion to alternative non-forest land use is demonstrated by figure below:

The PAIs #10 to #15 are in a former deforestation frontier region east of the state of Pará, where farming activities are established. According to the Pará State Government, this corresponds to a Consolidated Zone with an installed infrastructure and support for transporting beef cattle production to meatpacking plants (article), as shown in the map:

[18] http://www.obt.inpe.br/OBT/assuntos/programas/amazonia/prodes/pdfs/kintish_2007.pdf

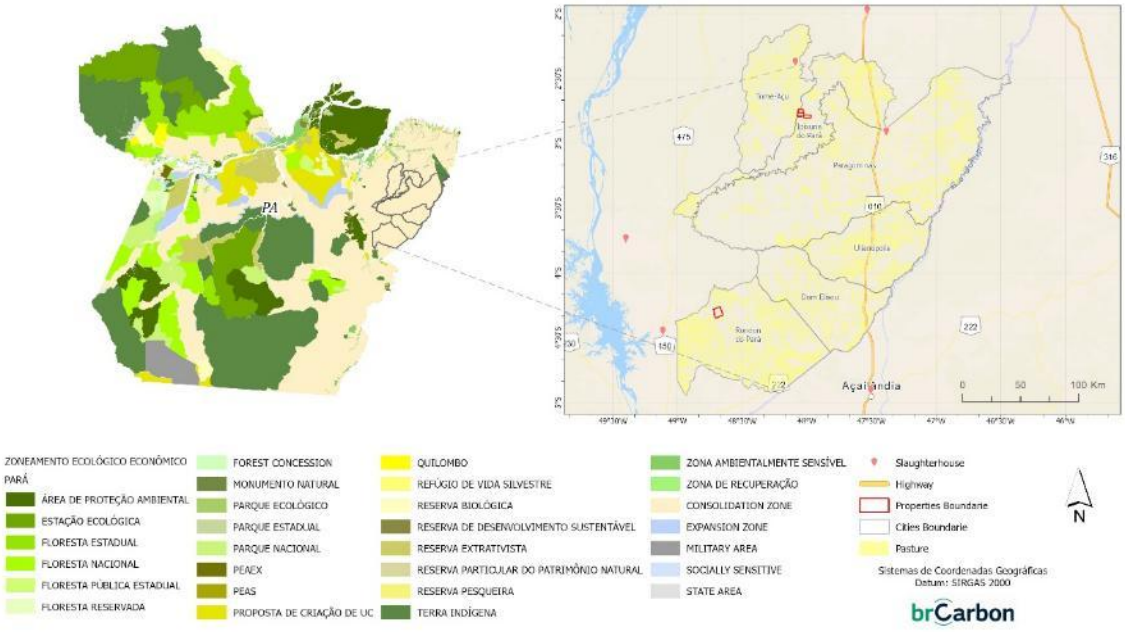


Figure 36. Deforestation frontier and consolidated zone. (PAIs #1-15).

As shown in Table 31 (Mapbiomas, 2022), it is possible to see how a considerable part of the municipalities where the projects are located are occupied by pasture, highlighting the importance of livestock farming in the region and the pressure that the remaining forests are under when converted to cattle farming.

Table 31. Pasture in Para region municipalities of PAIs #10-15.

Municipalities	Municipality area (ha)	Pasture area (ha)	%
Ipixuna do Pará	559,173.49	199,341.99	35%
Rondon do Pará	879,460.90	432,373.53	49.10%
Tomé-Açu	549,849.39	180,416.33	32.80%

3) **Government approval for deforestation** to occur is demonstrated for new PAIs through Recent approval from relevant government department (local to national) for conversion of forest to an alternative land use; or Documentation that a request for approval has been filed with the relevant government department for permission to deforest and convert to alternative land use, according to the documentation presented in ANNEX_BASELINE-SCENARIO.

4) **Intent to deforest** is demonstrated by the same documents that prove government approval for deforestation, showing the authorization for vegetation suppression or a request to carry out this suppression, as well as a documented history of similar planned deforestation activities by the deforestation agent within the five years prior to without-project deforestation. The project proponent has presented all relevant documents that corroborate the intent to deforest project areas or other properties of the same deforestation agent, as can be seen in ANNEX_BASELINE-SCENARIO.

Baseline emissions are estimated according to VMD0006 v1.3. This module allows to estimate GHG emissions related to planned deforestation on forest lands that are legally authorized and documented to be converted to non-forest land. These areas would be deforested in the absence of the REDD project activity, and converted to pasture for cattle rising, as presented in section 3.5 of the registered GPD.

The annual area of baseline planned deforestation (AAplanned,i,t) is calculated according to VMD0006 BL-PL v1.3 equation 5. The tables below show the annual area of planned deforestation over the baseline scenario in all PAIs for the third monitoring period. The tables also present the total area of planned deforestation, for each instance, over the fixed baseline period (Aplanned,i,t), just as reference. The net carbon stock changes in all pools in the baseline (ΔCBSL,i,t) is calculated according to equation 13 from VMD0006 v1.3.

The rate at which deforestation is projected to occur for PAIs #1-5 comes from a valid verifiable plan. For PAIs #6-15, the rate of deforestation was determined according to the proxy areas approach, where ten (10) proxy areas with recent government-approved vegetation suppression plans were selected. Based on the deforestation rate observed within these proxy areas, an annual deforestation rate of 32.7 % was established for PAIs #7-15 (APPENDIX_GIS_DATA > RATE_OF_DEFORESTATION).

In the case of PAI #6 where the annual deforestation initially exceeded the legal limit of 1,000 ha established in CONAMA Resolution No. 001/1986, the annual deforestation rate was capped at 910.11 ha, this being the maximum legal deforestation verified in a single year within a farm in the proxy areas.

The table below lists the proxy areas, showing the total farm area, the area of forest cover exceeding the legal reserve, the area authorized for clearing (deforestation permit), the area legally deforested during the validity period of the deforestation permit, the validity of each deforestation permit in years,

the annual legal deforestation rate observed in each proxy area, and finally, the average annual legal deforestation rate calculated based on all proxy areas.

Table 32. Proxy areas for $D\%_{planned}$ parameter.

Proxy area	Farm Area (ha)	Forest cover exceeding the legal reserve[1] (ha)	Deforestation permit (ha)	Deforestation executed2 (ha)	Deforestation permits validity period (years)	Average annual legal deforestation (%)
AUS - 178	6.690,38	965,70	588,00	561,76	1	58,2%
André Ricardo Figueiredo	9.982,11	1891,02	450,02	404,00	2	10,7%
Autorização Desmate - Ivo	9.361,00	573,82	597,50	145,71	1	25,4%
Fazenda Sarah II	1.331,35	234,29	125,04	62,69	1	26,8%
Fazenda Lima	4.012,23	632,05	387,39	210,11	1	33,2%
Jaldecy Pancieri - Fazenda Arizona I - Etapa 1 e 2	2.180,03	326,80	326,78	316,17	2	48,4%

Fazenda Catarinense e Maringa - Etapa 1	39.190,58	6326,16	301,51	259,55	1	4,1%
Fazenda Dona Adelina	13.611,36	2679,35	891,55	850,34	1	31,7%
Fazenda Gleba Vanessa	6.421,94	1255,73	944,49	910,11	1	72,5%
Fazenda Chapadão I, II e IV	7.985,03	4867,02	1326,05	778,72	1	16,0%
					Average	32,7%

The farms considered as proxy areas range in size from 1.3 to 39 thousand hectares, with an average of 10 thousand hectares. According to EMBRAPA[19], the average range of the *módulo fiscal* in the northern region of Brazil is between 55 and 110 hectares. According to INCRA[20], the limit of 15 *módulos fiscais* is used to classify a property as a large farm in Brazil. Thus, the sampling is understood to be representative of large-scale properties in the country.

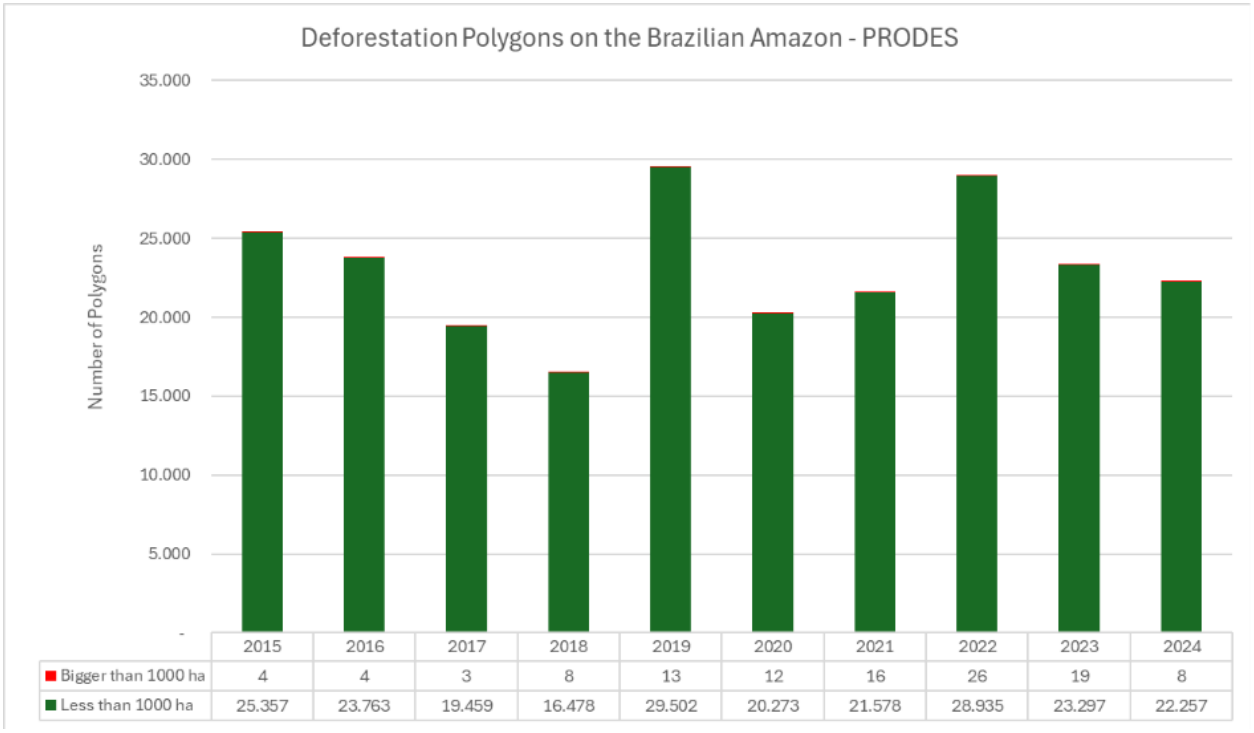
The deforestation permits vary from 301 to 1,326 hectares, with legal deforestation executed during the validity period of the permits ranging between 210 and 910 hectares. This supports the thesis

[19] Brazilian Agricultural Research Corporation.

[20] National Institute for Colonization and Agrarian Reform.

that planned deforestation typically occurs in plots limited to 1,000 hectares at a time, in line with common practice in Brazil.

Using the PRODES[21] system, the project proponent analyzed deforestation patterns in the Brazilian Amazon over the past 10 years, considering the number of deforestation polygons in two classes: “less than 1,000 ha” and “greater than 1,000 ha.” The figure below illustrates the analysis.



	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Bigger than 1000 ha	4	4	3	8	13	12	16	26	19	8
Less than 1000 ha	25.357	23.763	19.459	16.478	29.502	20.273	21.578	28.935	23.297	22.257

Figure 37. Deforestation Polygons in Brazilian Amazon

As can be observed, in 99,95% of cases deforestation in Brazil occurs in polygons of up to 1,000 hectares.

The annual legal deforestation rate observed in the proxy areas examination varied from 4% to 72.5%, with an average of 32.7%. The rates were calculated based on the deforestation verified in the area approved for clearing during the validity period of the deforestation permit (numerator), and in the entire area exceeding the legal reserve within the farm (denominator), excluding permanent preservation areas (which cannot be legally deforested), which makes $D\%_{planned,l,t}$ accurate and conservative. The average rate revised in this latest round of review with Verra was reduced from

[21] Projeto de Monitoramento do Desmatamento na Amazônia Legal por Satélite.

33.7% to 32.7%, making the project's carbon credit generation estimates for the current monitoring period more conservative.

It was analyzed deforestation dynamics in all proxy areas, considering a historical period of 10 years, to make inferences about the degree of immediate deforestation threat to the remaining forest in the area exceeding the legal reserve within the farms. The figures below presents the annual deforestation in the area exceeding the legal reserve in each proxy area.

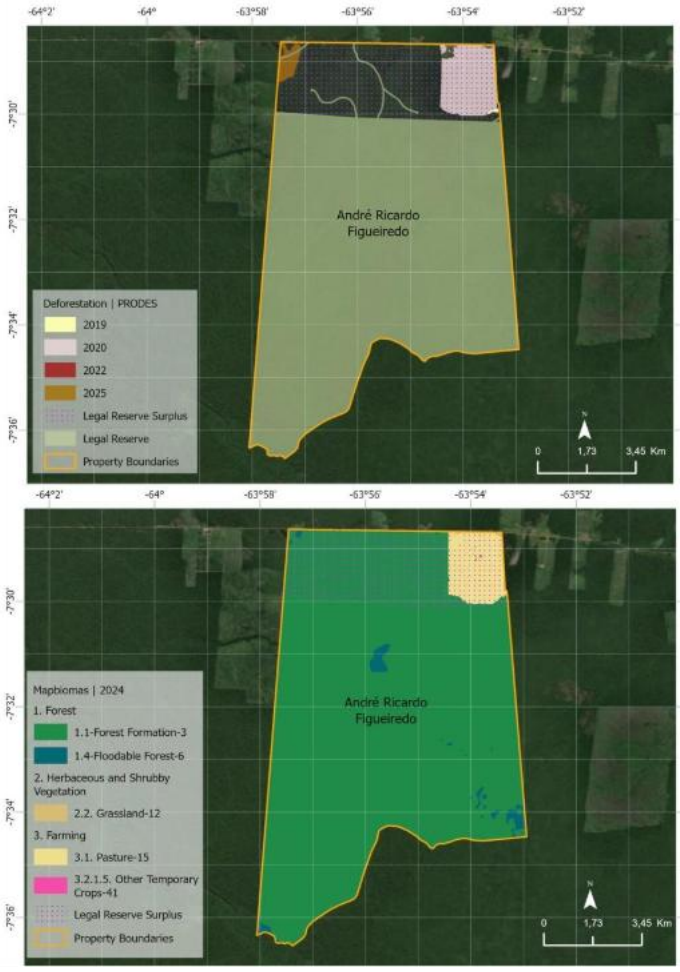


Figure 38. André Ricardo Figueiredo Proxy area.

The "André Ricardo Figueiredo" farm recorded 526.58 ha of legal deforestation during the period analyzed. This deforestation was carried out in 1 stage. The property still has 1,440.72 ha of forests subject to legal deforestation (76%).

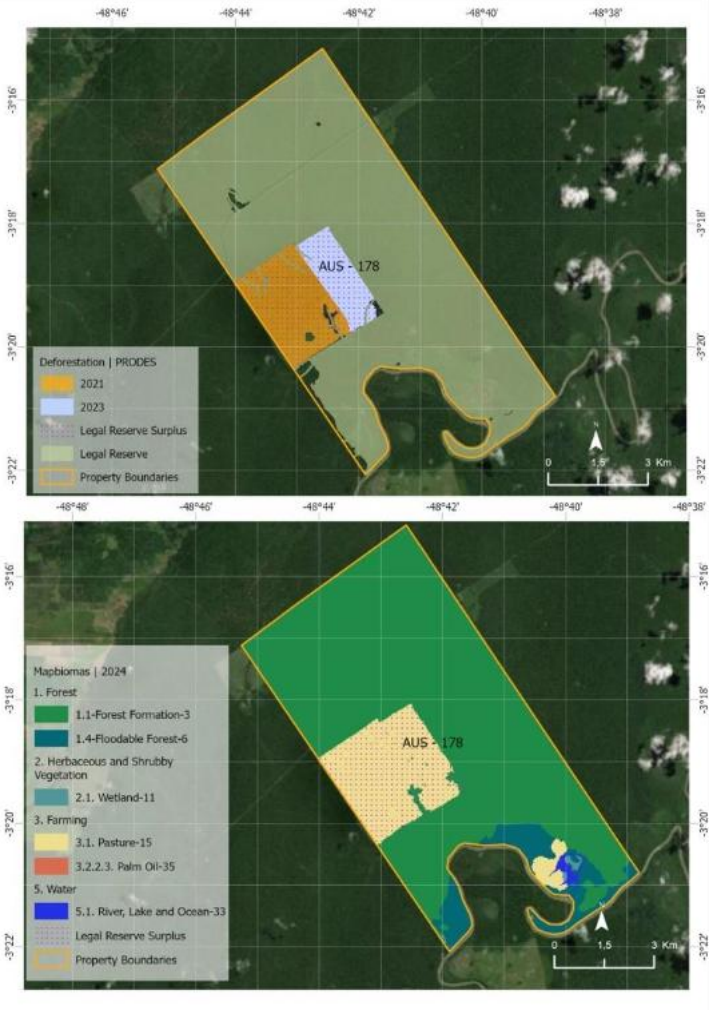


Figure 39. AUS-178 Proxy area.

The “AUS-178” farm recorded 941.80 ha of legal deforestation during the period analyzed. This deforestation was carried out in 2 stages, according to common practice in Brazil. The property still has 43.87 ha of forests subject to legal deforestation (5%).

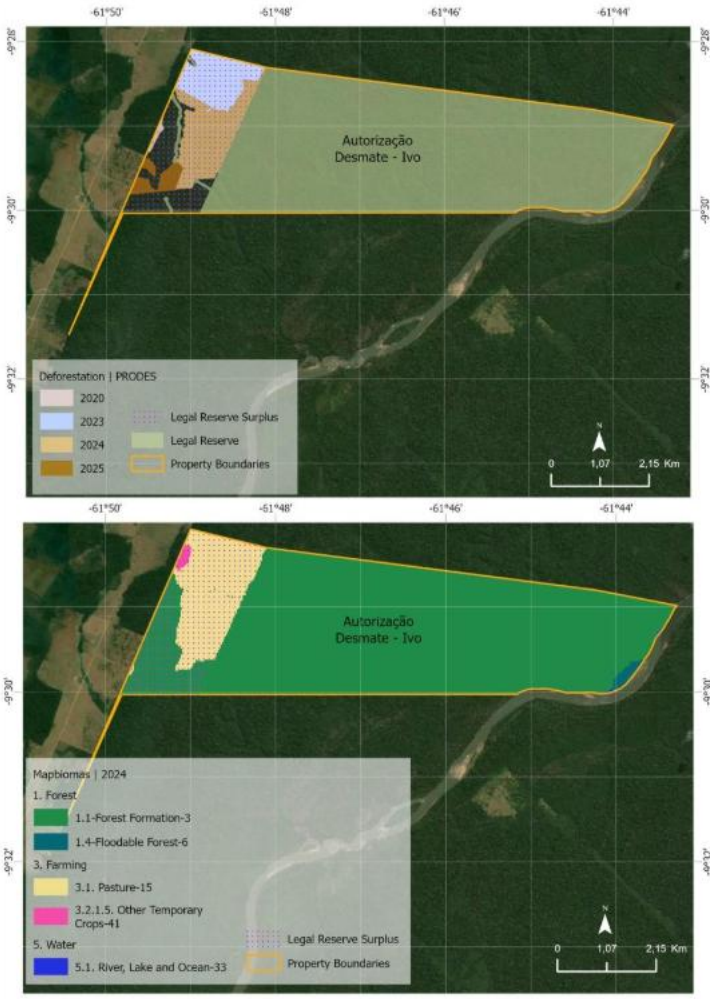


Figure 40. Autorização Desmate – Ivo Proxy area.

The “Authorization to Clear - Ivo” farm recorded 403.62 ha of legal deforestation during the period analyzed. This deforestation was carried out in 3 stages, according to common practice in Brazil. The property still has 204.75 ha of forests subject to legal deforestation (36%).

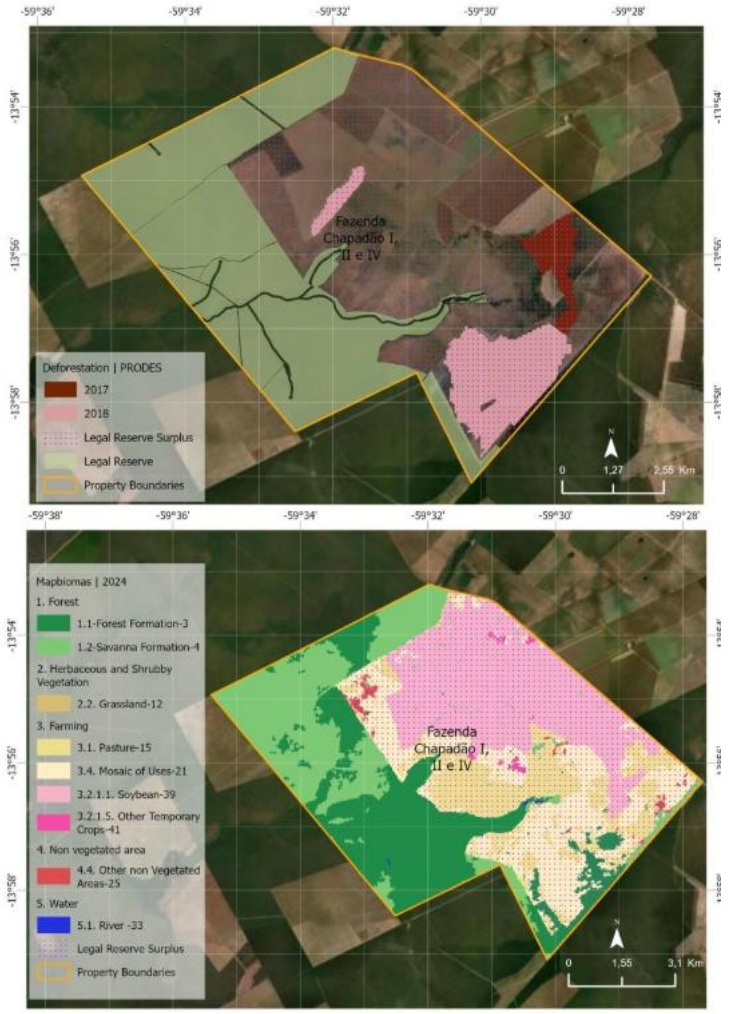


Figure 41. Fazenda Chapadão I, II e IV Proxy area

The “Chapadão I, II and IV” farm recorded 813 ha of legal deforestation during the period analyzed. This deforestation was carried out in 2 stages, according to common practice in Brazil. The property still has 217.84 ha of forests subject to legal deforestation (4%).

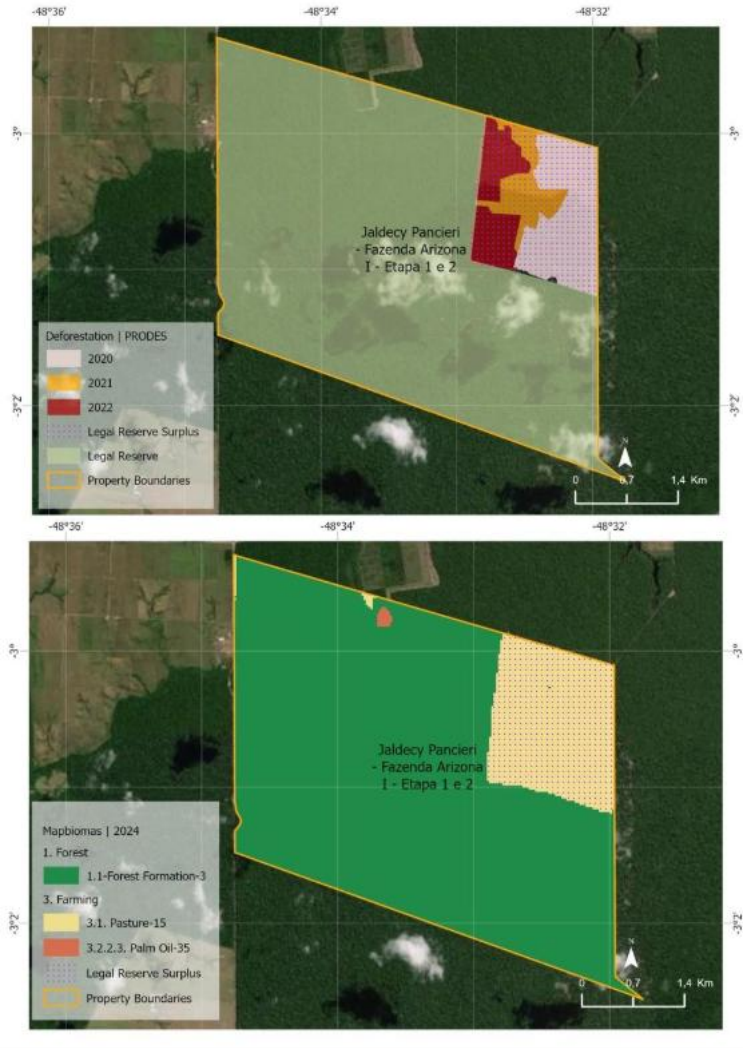


Figure 42. Jaldecy Pancieri Proxy area.

The “Jaldecy Pancieri” farm recorded 328 ha of legal deforestation during the period analyzed. This deforestation was carried out in 3 stages, according to common practice in Brazil. The property no longer has forests subject to legal deforestation (0%).

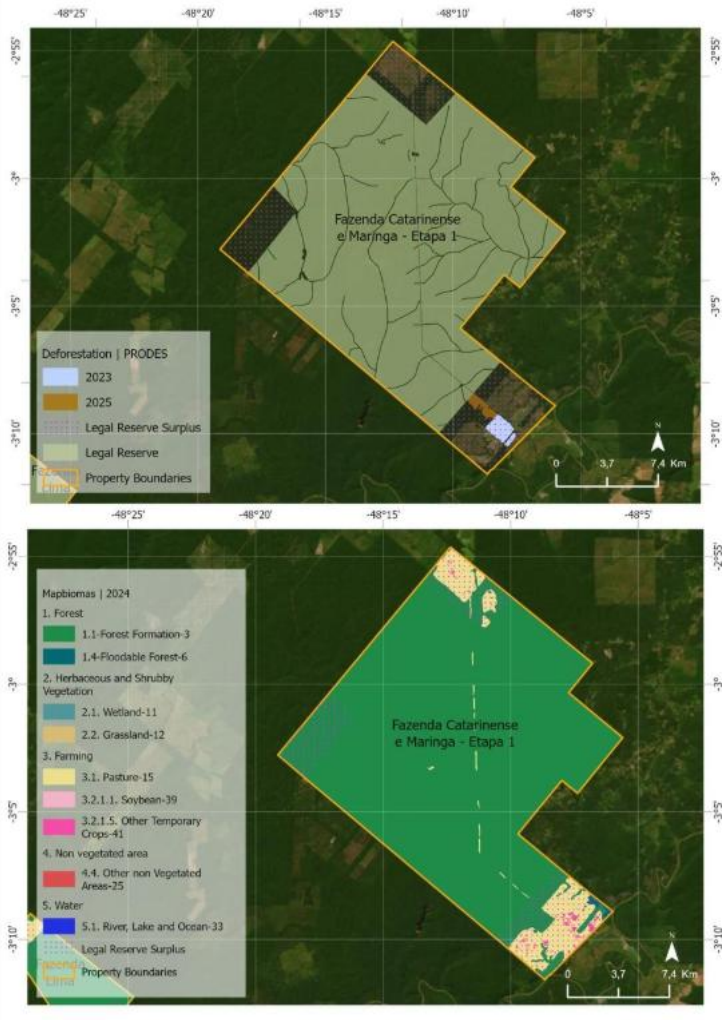


Figure 43. Fazenda Catarinense e Maringá Proxy area.

The “Catarinense and Maringá” farm recorded 410 ha of legal deforestation during the period analyzed. This deforestation was carried out in 2 stages, according to common practice in Brazil. The property still has 3,501 ha of forests subject to legal deforestation (55%).

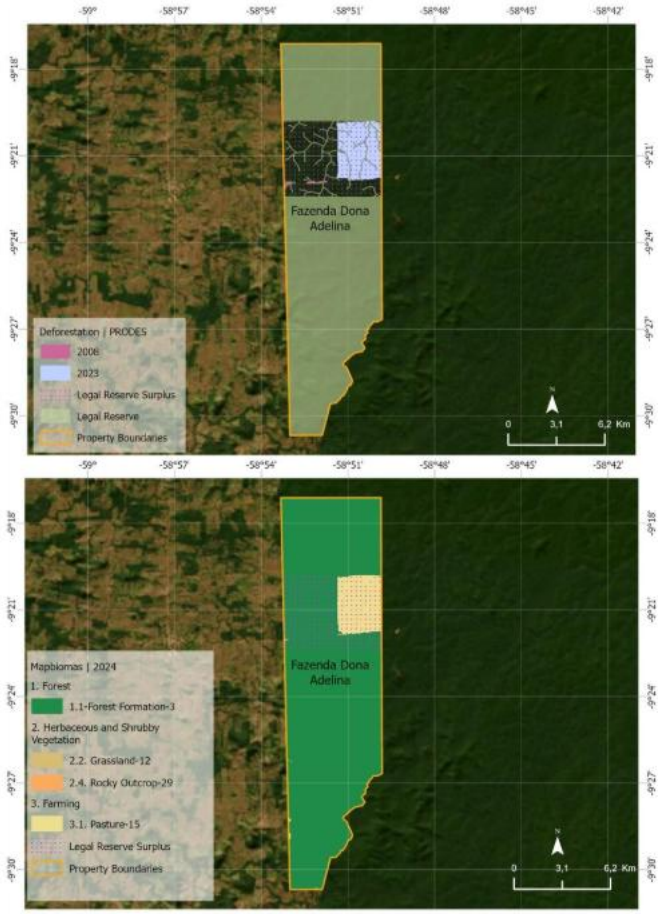


Figure 44. Fazenda Dona Adelina Proxy area.

The “Adelina” farm recorded 924 ha of legal deforestation during the period analyzed. This deforestation was carried out in 1 stage. The property still has 1,754 ha of forests subject to legal deforestation (65%).

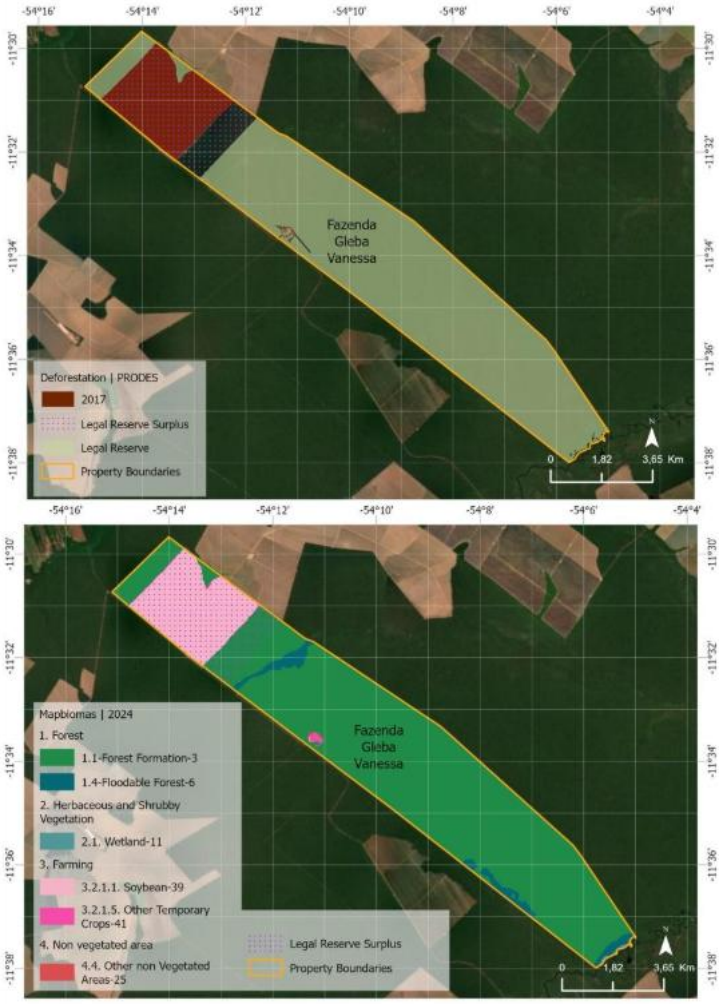


Figure 45. Fazenda Gleba Vanessa Proxy area.

The “Gleba Vanessa” farm recorded 944 ha of legal deforestation during the period analyzed. This deforestation was carried out in 1 stage. The property still has 310 ha of forests subject to legal deforestation (25%).

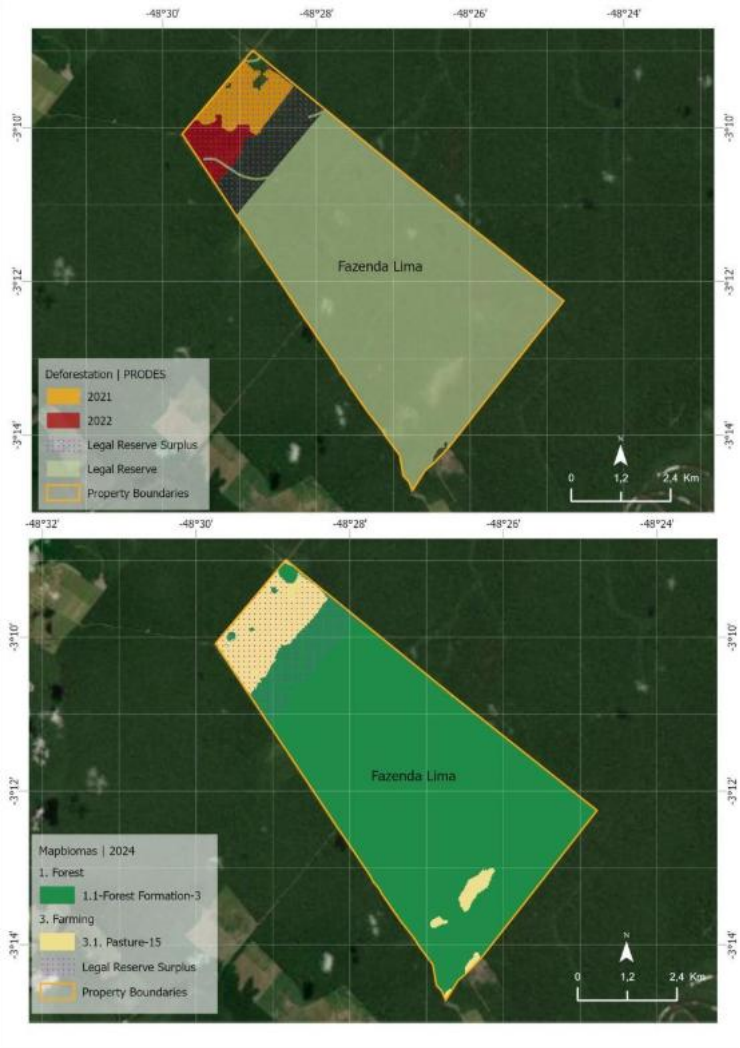


Figure 46. Fazenda Lima Proxy area.

The “Lima” farm recorded 346 ha of legal deforestation during the period analyzed. This deforestation was carried out in 2 stages, according to common practice in Brazil. The property still has 282 ha of forests subject to legal deforestation (45%).

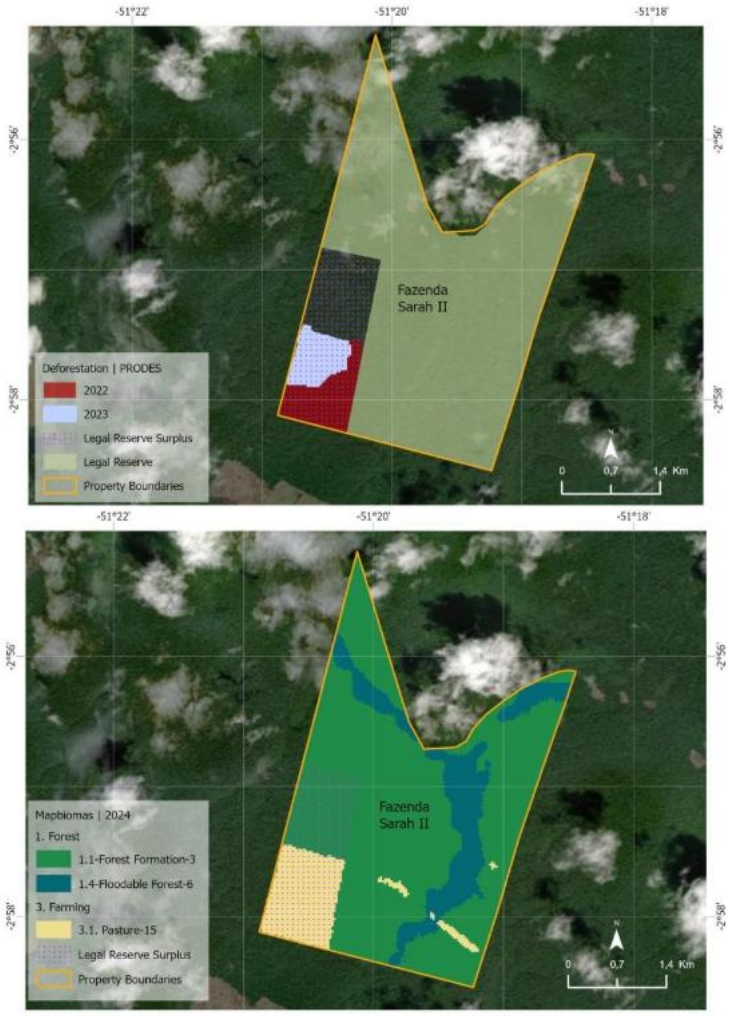


Figure 47. Fazenda Sarah II Proxy area.

The “Sarah II” farm recorded 124 ha of legal deforestation during the period analyzed. This deforestation was carried out in 2 stages, according to common practice in Brazil. The property still has 109 ha of forests subject to legal deforestation (47%).

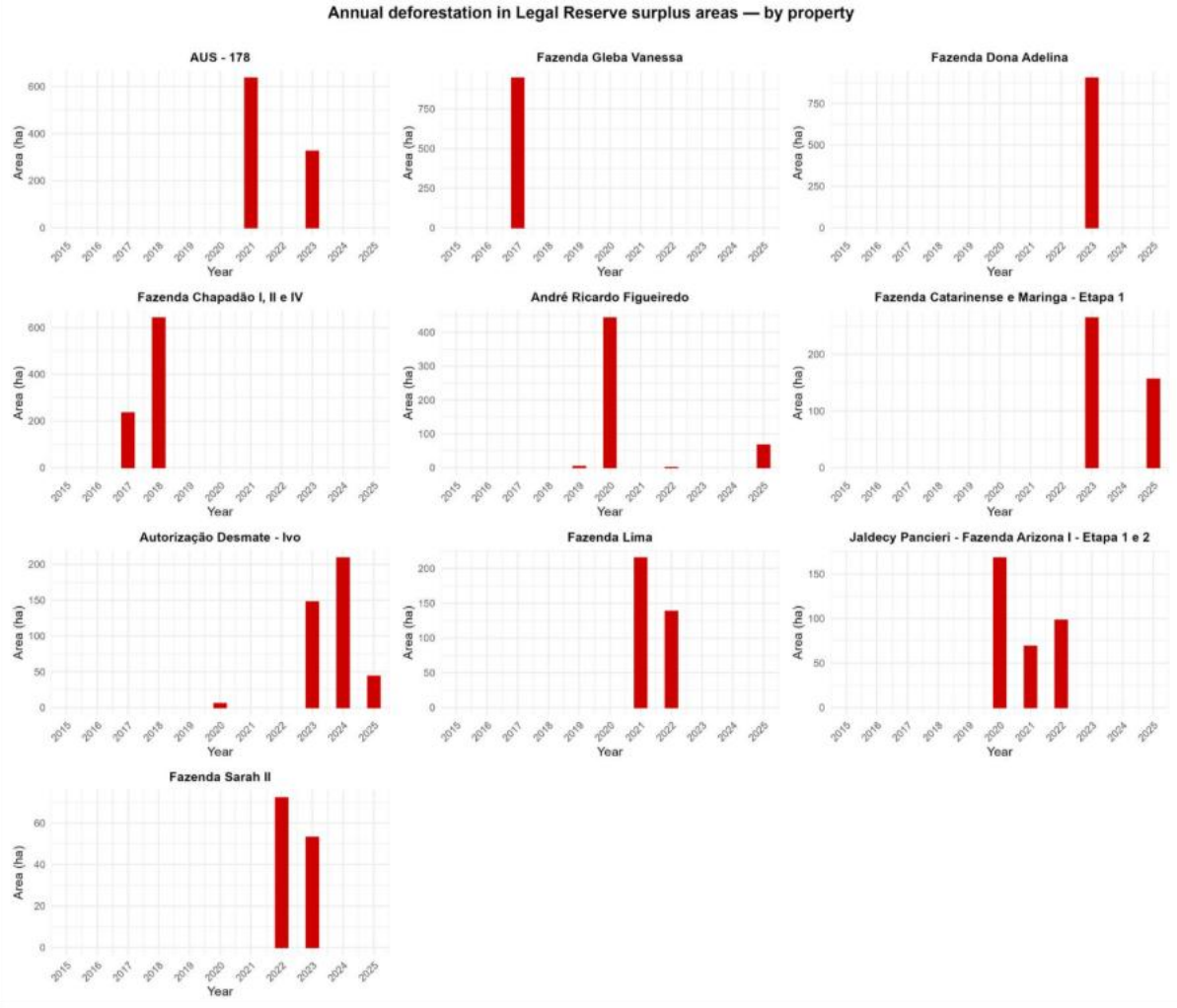


Figure 48. Historical Deforestation in proxy areas used for $D\%_{planned}$ parameter

The figure above shows the historical deforestation analyzed over a period of 10 years (2016 to 2025) in all proxy areas considered to calculate $D\%_{planned,i,t}$. In 7 out of 10 cases analyzed, planned deforestation occurred in stages[22]. As noted, the common practice is to stagger deforestation permit requests to comply with regulatory limits, in a way that baseline agents are likely to request new deforestation permits after the first one is exhausted. It is a matter of fact that in some states a deforestation permit can even emphasize future deforestation events (yet to be approved) in the same document, as it can be demonstrated by the deforestation permit issued for “Lima,” “Sarah II,”

[22] To identify deforestation as "planned" or a “planned deforestation stage”, the project proponent disregarded small deforestations observed in the area exceeding the legal reserve among the proxy areas, considering them as "unplanned".

"Catarinense and Maringá," and "Jaldecy Pancieri" farms (APPENDIX_GIS-DATA > RATE_OF_DEFORESTATION > Used_ASV > PDF > FazendaLima, FazendaSarahII, ASV_FAZENDA_CATARINENSE_MARINGA_ETAPA01, FazendaArizona_I_Etapa1). In 7 out of 10 cases analyzed, deforestation either exceeded the limits of the deforestation permit considered for calculating the average deforestation rates or reached the entire area exceeding the legal reserve within the rural property. On average, considering all cases analyzed, the remaining forest cover in the area exceeding the legal reserve within the rural properties is 36%, while the area approved for deforestation was 54%. Thus, the evidence indicates that the entire area exceeding the legal reserve in the proxy areas considered is under direct threat of deforestation and that it is common practice to clear small patches of forest at a time.

The similarity analyses of vegetation, slope, topography, and soil between the proxy areas and PAIs #6-15 for the definition of the deforestation rate, along with the shapefiles and other relevant information, can be found in APPENDIX_GIS-DATA > RATE_OF_DEFORESTATION. The table below shows the net carbon stock changes in all pools in the baseline in all PAIs for the third monitoring period:

Table 33. Total and annual area of planned deforestation over the baseline scenario in PAIs #1-15 in the third monitoring period. (Table 44 from APPENDIX_CALCULUS-TABLES-2551_MR3_CALCULUS_TABLE_INTEGRATED.xsls)

Instance	Stratum	AAplanned,i,t	Aplanned,t	D%planned,i,t	D%planned data source
PAI #1	As	186.00	691.59	26.9%	ASV (Autorização de Supressão Vegetal)
PAI #1	Ds	92.00	299.00	30.8%	ASV
PAI #2	Aa	0.00	822.07	0.0%	ASV
PAI #2	Ab	404.00	3217.93	10.3%	ASV
PAI #3	Aa	172.00	682.46	25.2%	ASV
PAI #3	Ab	322.00	3851.88	8.4%	ASV
PAI #4	Aa	249.00	800.54	31.1%	ASV
PAI #4	Ab	249.00	3398.77	7.3%	ASV
PAI #5	Aa	249.00	1625.12	15.3%	ASV
PAI #5	Ab	249.00	2587.92	9.6%	ASV

Instance	Stratum	AAplanned,i,t	Aplanned,t	D%planned,i,t	D%planned data source
PAI #6	Db	910.11	7874.82	11.6%	Proxy areas
PAI #7	D	76.36	233.56	32.7%	Proxy areas
PAI #8	D	14.43	44.15	32.7%	Proxy areas
PAI #9	D	264.32	808.48	32.7%	Proxy areas
PAI #10	D	189.51	579.66	32.7%	Proxy areas
PAI #11	D	249.73	763.86	32.7%	Proxy areas
PAI #12	D	42.49	129.95	32.7%	Proxy areas
PAI #13	D	38.84	118.80	32.7%	Proxy areas
PAI #13	Ap	4.90	15.00	32.7%	Proxy areas
PAI #14	D	132.60	405.57	32.7%	Proxy areas
PAI #15	D	74.64	228.31	32.7%	Proxy areas
PAI #15	Ap	288.68	883.00	32.7%	Proxy areas

Table 34. Net carbon stock changes in all pools in the baseline period in PAIs #01-15 (t CO2-e) in the third monitoring period. (Table 45 from "APPENDIX_CALCULUS-TABLES" - 2551_MR3_CALCULUS_TABLE_INTEGRATED.xsls)

Instance	ΔCBSL,i,t
PAI #1	148,519.09
PAI #2	184,946.15
PAI #3	148,519.09
PAI #4	184,946.15
PAI #5	220,131.00
PAI #6	219,231.72
PAI #7	219,231.72
PAI #8	517,870.33
PAI #9	47,024.92
PAI #10	8,889.15
PAI #11	162,779.18
PAI #12	112,418.35
PAI #13	148,141.80
PAI #14	25,202.30
PAI #15	25,948.96
Total	78,655.61

The greenhouse gas emissions as a result of deforestation activities within the project boundary is estimated according to VMD0006 v1.3 equation 15 and VMD0013 v1.2, equations 1 and 2. The table below shows the greenhouse gas emissions as a result of deforestation activities within the project boundary in all PAIs for the third monitoring period. For all purposes, the annual area of planned deforestation ($AA_{planned,i,t}$) is considered as burned ($A_{burn,i,t}$) for GHG emission estimates in the baseline scenario, following the common practice of deforestation agents in the region (slash and burn).

Table 35. non-CO2 emissions in the baseline case in all PAIs (t CO2-e) in the third monitoring period. (Table 46 from "APPENDIX_CALCULUS-TABLES" - 2551_MR3_CALCULUS_TABLE_INTEGRATED.xsls)

Instance	Stratum	Aburn,i,t
PAI #1	**As**	186.00
PAI #1	**Ds**	92.00
PAI #2	**Aa**	0.00
PAI #2	**Ab**	404.00
PAI #3	**Aa**	172.00
PAI #3	**Ab**	322.00
PAI #4	**Aa**	249.00
PAI #4	**Ab**	249.00
PAI #5	**Aa**	249.00
PAI #5	**Ab**	249.00
PAI #6	**Db**	910.11
PAI #7	**D**	76.36
PAI #8	**D**	14.43
PAI #9	**D**	264.32
PAI #10	**D**	189.51
PAI #11	**D**	249.73
PAI #12	**D**	42.49
PAI #13	**Ap**	4.90
PAI #13	**D**	38.84
PAI #14	**D**	132.60
PAI #15	**Ap**	288.68
PAI #15	**D**	74.64
GHGBSL,E		141,013.53

The baseline net GHG emissions for planned deforestation is determined according to VMD0006 BL-PL v1.3 equation 1. The table below shows the net carbon stock changes in all pools in the baseline in all PAIs for the third monitoring period:

Table 36. Net GHG emissions in the baseline from planned deforestation in PAIs #1-15 in the third monitoring period (t CO2-e). (Table 47 from "APPENDIX_CALCULUS-TABLES" - 2551_MR3_CALCULUS_TABLE_INTEGRATED.xlsx)

Instance	ΔCBSL,planned
PAI #1	157,851
PAI #2	196,476
PAI #3	233,911
PAI #4	232,984
PAI #5	232,984
PAI #6	548,372
PAI #7	49,967
PAI #8	9,445
PAI #9	172,963
PAI #10	119,720
PAI #11	157,764
PAI #12	26,839
PAI #13	27,556
PAI #14	83,764
PAI #15	224,931
Total	2,475,530

3.2.1.2 Aboveground Tree Biomass

The baseline carbon stock change in aboveground tree biomass ($\Delta C_{AB\_tree,i}$) was calculated according to the difference between the forest carbon stock in aboveground tree biomass ($C_{AB\_tree,bsl,i}$) and the post-deforestation carbon stock in aboveground tree biomass ($C_{AB\_tree,post,i}$), according to VMD0006 v1.3, equation 6.

Forest carbon stock in aboveground tree biomass ($C_{AB\_tree,bsl,i}$) is estimated through UAV-Lidar survey calibrated with field-based forest inventory, the detailed methodologies are described below. Post-deforestation carbon stock in aboveground tree biomass ($C_{AB\_tree,post,i}$) is taken from peer reviewed literature (Silva Neto et al., 2012).

Table 37. Carbon stock change in aboveground tree biomass (t CO2e ha-1). (Table 15 from Appendix II – Calculus tables – 2551_MR3_CALCULUS_TABLE_INTEGRATED.xlsx).

Instance	Stratum (i)	$C_{AB\_tree,bsl,i}$	$C_{AB\_tree,post,i}$	$\Delta C_{AB\_tree,i}$

PAI #1	As	456.37	0.11	456.26
	Ds	447.34	0.11	447.23
PAI #2-5	Aa	370.05	0.11	369.94
	Ab	402.11	0.11	402.00
PAI #6	Db	463.85	0.11	463.74
PAI #7-15	D	543.76	0.11	543.65
	Ap	306.48	0.11	306.37

Field inventory

A stratified sampling was conducted for the allocation of plots or Sampling Units (SU) within the Project Area (PA) of each instance. The biomass measurement and estimation protocol followed the Option 1 method - Fixed Area and the use of an allometric equation, as suggested by the VMD0001 v1.1 CP-AB tool (VCS, 2013). A total of 60 SUs was allocated in PAI #1, 65 in PAIs #2-5, 62 in PAI #6 and 128 in PAIs #7-15. Each transect presents the SUs arranged in a straight line and spaced 100m apart. The SUs were rectangular in shape and measure 20m x 60m, covering an area of 1,200 m². All sampling units were georeferenced using a Garmin GPSmap 62sc navigation GPS, ensuring easy access for future location and remeasurement. Within each SU, the carbon stocks contained in the following components were measured: Aboveground living trees (thick and thin); Belowground living trees (thick and thin); Aboveground non-tree; Belowground non-tree; Dead trees (standing and fallen); Litter; and Soil Organic Carbon

Aboveground Living Trees (Thick and Thin)

For the Thick Living Trees (TLT) component, the Diameter at Breast Height (DBH) was measured for all living trees located within the SUs, when equal to or greater than 10 cm. All sampled individuals were identified with numbered plates and marked with red paint at the DBH Measurement Point (MP) for monitoring and future remeasurement. For the measurement of the Thin Living Trees (TLT) component, two sub-samples were allocated, each measuring 10 x 10 meters, totalling a sample area of 200 m² (as shown the following picture). The allocation of these sub-samples was standardized at the beginning of the SU on the right side, and at the end of the SU on the left side. For the TLT component, only living and thin individuals in the following diameter range were counted and measured: 5 < DBH < 10 cm. All sampled individuals were identified with numbered plates and marked with red paint at the DBH Measurement Point (MP) for monitoring and future remeasurement.

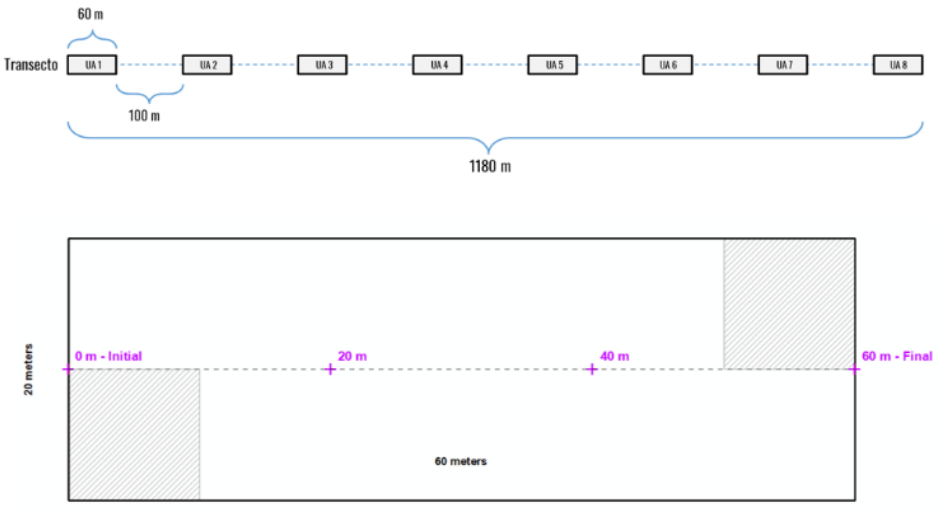


Figure 49. Inventory methodology transects and 20mX60 m plots. Above: representation of the 1180m transect made up of 8 sampling units (SU) positioned along a central road and 100m apart. Below: Representation of the SU with a rectangular shape and dimensions of 20mx60m (1200m^2) for measuring the Thick Living Trees. Hatched are the two 10mx10m (100m^2) subsamples for measuring the Thin Living Trees reservoir. The dotted black line illustrates the central path for walking and the subdivision of the AU into right and left sides. The purple highlighted points illustrate the spatial sub-delimitation of the samples geo-referenced with navigation GPS.

The equation below presents the selected allometric model and the respective statistical parameters for estimating the individual aboveground dry biomass in the AVG (Thick Living Trees) and AVF (Thin Living Trees) tree reservoirs (Chave et al., 2014).

$$AGB_{est} = \exp\left(-1.803 - 0.976E + 0.976\ln(\rho) + 2.673\ln(D) - 0.0299[\ln(D)]^2\right)$$

The variable *E* refers to the environmental factor that considers the climate, soil, and altitude of the study site, and can be consulted at: http://chave.ups-tlse.fr/pantropical_allometry.htm. For the variable ρ, referring to wood density, the scientific article by Fearnside et al. (1997, "Wood density for estimating forest biomass in Brazilian Amazonia") was used, which indicates average wood density values for different states and physiognomies present in the Amazon Forest. For converting dry biomass to carbon content, the parameter Carbon Fraction = 0.485 (Nogueira, 2008 – "Estimates of forest biomass in the Brazilian Amazon") was used. Mode details can be found in Appendix IV. The number of sample units from field-based forest inventory per each PAI and forest classes is presented below.

Table 38. Summary of sample units based on forest inventory for biomass estimates for all included carbon pools.

Instance	Stratum (i)	Number of Sample Units (SU)
PAI #1	As	30
	Ds	30
PAIs #2-5	Aa	33
	Ab	32
PAI #6	Db	62
PAIs #7-15	D	104
	Ap	24
TOTAL		**315**

UAV-LiDAR survey

The use of UAV-LiDAR significantly increases the accuracy of carbon estimates. Beyond the precision of these estimates, the sampling power of LiDAR far exceeds that of field sampling. For instance, the inventory area in the Project Activity Instances (PAIs) surveyed by LiDAR was approximately 17 hectares (144 plots), whereas the area sampled by UAV-LiDAR reached nearly 2,500 hectares, covering 5-81% of the PAIs' area.

For the collection of LiDAR data, we employed the 'DJI Zenmuze L1' sensor mounted on the 'DJI Matrice 300' UAV. The flight planning was conducted using the 'UgCS Enterprise' software, where the parameters for the flights were set at an altitude of 120 meters with a 70% overlap between LiDAR collection strips. For the geolocation correction of the data, we used Post-Processed Kinematic (PPK) processing, adjusting the latitude, longitude, and altitude based on the location of the 'DJI D-RTK 2 GNSS Mobile Station'. The point clouds were pre-processed using the 'DJI Terra' software. From these point clouds, we produced Canopy Height Models (CHM) with a resolution of 1-meter pixels, utilizing the *lidR* package (Russel et al., 2020) in the RStudio statistical environment. The flight paths were planned to overlap the areas where the Sampling Units (SUs) were allocated.



Figure 50. LiDAR data collection using drone.

LiDAR estimates PAIs #2-5

From the CHMs, we generated the Top Canopy Height (TCH) metric, calculated as the average of the pixels in a 35 square meter area, closely resembling the area of the SUs. To generate the carbon maps, we employed the equation from Longo et al. (2016 – "Aboveground biomass variability across intact and degraded forests in the Brazilian Amazon"), a leading reference in remote sensing of Amazon Forest biomass, as published in a peer-reviewed scientific article. The carbon maps and CHM for each instance can be found in Appendix IV.

To accurately calculate and validate the LiDAR-based estimates with field inventory data, we conducted a resampling process with 1000 iterations. In each iteration, 100 pixels from each forest class were randomly sampled, simulating 1000 inventories of 100 plots/samples each. For each iteration, the average of the samples from each forest class and its uncertainty were calculated. Furthermore, to validate the LiDAR estimates, the relative difference between the field inventory estimates and the LiDAR-based estimates was calculated in each iteration. Thus, the average of the sampled pixels, the Standard Deviation, the Uncertainty, and the Relative Difference when compared with the field inventory values were calculated.

In adopting a conservative approach, considering that Longo et al. (2016) used a factor of 0.500 to calculate the equivalent carbon amount in forest biomass, we performed a conversion step to use a factor of 0.485. Additionally, as Longo et al.'s equation considered the non-tree component, we conducted another step to subtract the 10.7% pertaining to this component. Finally, we converted the data from kg C/m^2 to tCO_2e/ha. More details can be found in Appendix IV.

LiDAR estimates PAIs #7-15

Three model structures were tested and validated, including a non-linear model (similar used by Longo et al. (2016)), which involves the premise that the error distribution (ε) is described by a proportionality function, and that the variance is not constant as a function of the mean, assuming that the error is heteroscedastic. Using the summarized data of dry biomass from field plots of living trees, both thin (AVF) and thick (AVG), the average of canopy height model ("Top-Canopy-Height" - TCH) was used as an input variable. The model was evaluated through two selection stages. First, we assessed the performance of the model by the coefficient of determination (R^2) and the root mean square error (RMSE). Finally, we validated their generalization capability through the leave-one-out cross-validation (LOOCV) procedure. LOOCV involves dividing the dataset on which the model was fitted with k-1 observations and validated with the observation that was removed at the time of fitting. This procedure is repeated in an iterative process considering the total number of observations in the database. Thus, the relationship between the observed and predicted value (obs ~ pred) by LOOCV was evaluated to a correspondence that the null hypothesis of our regression has a 1:1 ratio, where the intercept and slope (angular coefficient) are statistically equal to 0 and 1 respectively. More details can be found at the Appendix IV.

From LiDAR model, maps with carbon estimates were generated from the TCH, considering the entire area flown over by the UAV-LiDAR system. The rasters of carbon maps can be checked in Appendix IV. Thus, it was possible to obtain maps with an approximate resolution of 35m, in order to make it compatible with the same area used in the field plots (60mx20m). Each pixel is equivalent to a field plot from the conventional inventory. At this stage, a buffer of 10 was applied to the carbon layers (derived from LiDAR data) to remove edge pixels. The calculations were applied from the useful area that considers maps after this removal, as well as the removal of pixels below the minimum value and above the maximum value of TCH computed in the model. From these maps, simulations were carried out in a resampling process with 1000 iterations, where in each iteration 128 samples were extracted with replacement (128 pixels) and their respective average estimates as well as the uncertainty of tC0²e ha-1. The justification for this number of samples is to follow the same logic of the total number of SUs installed in the field, in order to obtain different scenarios of similar proportion. To validate the efficiency of the model estimates from the approach with LiDAR metrics, we evaluated the relative

difference of the estimates obtained with the field plot data and used the methodology for calculating uncertainties (n > 30) suggested by the IPCC (2019b), at a 90% confidence level. Details can be found in Appendix IV.

3.2.1.3 Belowground Tree Biomass

The baseline carbon stock change in belowground tree biomass ($\Delta C_{BB\_tree,i}$) was calculated according to the difference between the forest carbon stock in belowground tree ($C_{BB\_tree,bsl,i}$) and the post-deforestation carbon stock in belowground tree biomass ($C_{BB\_tree,post,i}$), according to VMD0006 v1.3, equation 8.

Forest carbon stock in belowground tree biomass ($C_{BB\_tree,bsl,i}$) is calculated through root-to-shoot ratios taken from peer reviewed literature (Nogueira et al., 2008). Post-deforestation carbon stock in belowground tree biomass ($C_{BB\_tree,post,i}$) is taken from peer reviewed literature (Silva Neto et al., 2012).

Table 39. Baseline carbon stock change in belowground tree biomass (t CO2e ha-1). (Table 16 from Appendix II – Calculus tables – 2551_MR3_CALCULUS_TABLE_INTEGRATED.xlsx).

Instance	Stratum (i)	$C_{BB\_tree,bsl,i}$	$C_{BB\_tree,post,i}$	$\Delta C_{BB\_tree,i}$
PAI #1	As	45.64	0.02	45.62
	Ds	138.68	0.02	138.65
PAIs #2-5	Aa	37.01	0.02	36.98
	Ab	40.21	0.02	40.19
PAI #6	Db	143.79	0.02	143.77
PAIs #7-15	D	168.57	0.02	168.54
	Ap	95.01	0.02	94.99

3.2.1.4 Aboveground non-tree Biomass

The baseline carbon stock change in aboveground non-tree biomass (ΔCAB_non-tree,i) was calculated according to the difference between the forest carbon stock in aboveground non-tree biomass in stratum I (CAB_non-tree,bsl,i) and the post-deforestation carbon stock in aboveground non-tree biomass in stratum I (CAB_non-tree,post,i), according to VMD0006 v1.3, equation 7.

Forest carbon stock in aboveground non-tree biomass (CAB_non-tree,bsl,i) is estimated according to peer reviewed literature (Nogueira et al., 2008). Palms and vines are considered to represent 1.9% and 3.4% of the aboveground tree biomass in dense tropical forests, respectively, and 8.6% and 10.7% of the aboveground tree biomass in open tropical forests, respectively. Post-deforestation carbon stock in aboveground tree biomass (CAB_non-tree,post,i) is taken from peer reviewed literature (Silva Neto et ll., 2012).

Table 40. Baseline carbon stock change in aboveground non-tree biomass (t CO2e ha-1). (Table 17 from Appendix II – Calculus tables – 2551_MR3_CALCULUS_TABLE_INTEGRATED.xlsx).

Instance	Stratum (i)	$C_{AB\_non\text{-}tree,bsl,i}$	$C_{AB\_non\text{-}tree,post,i}$	$\Delta C_{AB\_non\text{-}tree,i}$
PAI #1	As	48.83	15.00	33.83
	Ds	23.71	15.00	8.71
PAIs #2-5	Aa	39.60	15.00	24.60
	Ab	43.03	15.00	28.03
PAI #6	Db	24.58	15.00	9.59
PAIs #7-15	D	28.82	15.00	13.82
	Ap	16.24	15.00	1.25

3.2.1.5 Belowground non-tree Biomass

The baseline carbon stock change in belowground non-tree biomass ($\Delta C_{BB\_non\text{-}tree,i}$) was calculated according to the difference between the forest carbon stock in belowground non-tree ($C_{BB\_non\text{-}tree,bsl,i}$) and the post-deforestation carbon stock in belowground non-tree biomass ($C_{BB\_non\text{-}tree,post,i}$), according to VMD0006 v1.3, equation 9.

Post-deforestation carbon stock in belowground non-tree biomass ($C_{BB\_non\text{-}tree,post,i}$) is calculated through root-to-shoot ratios taken from peer reviewed literature (Silva Neto et al., 2012).

Table 41. Baseline carbon stock change in belowground non-tree biomass (t CO2e ha-1). (Table 18 from Appendix II – Calculus tables – 2551_MR3_CALCULUS_TABLE_INTEGRATED.xlsx).

Instance	Stratum (i)	$C_{BB\_non\text{-}tree,bsl,i}$	$C_{BB\_non\text{-}tree,post,i}$	$\Delta C_{BB\_non\text{-}tree,i}$
PAI #1	As	9.77	3.00	6.77
	Ds	4.74	3.00	1.74
PAIs #2-5	Aa	7.92	3.00	4.92
	Ab	8.61	3.00	5.61
PAI #6	Db	4.92	3.00	1.92
PAIs #7-15	D	5.76	3.00	2.76
	Ap	3.25	3.00	0.25

3.2.1.6 Deadwood

The baseline carbon stock change in deadwood ($\Delta C_{DW,i}$) was calculated according to the difference between the forest carbon stock in deadwood (CDW,bsl,i) and the post-deforestation carbon stock in deadwood ($C_{DW,post,i}$), according to VMD0006 v1.3 equation 10.

Forest carbon stock in dead wood ($C_{DW,bsl,i}$) was estimated based on field measurements of fixed area plots, considering standing dead trees and lying dead wood, according to VMD0002 v1.0 criteria. Biomass estimation for standing deadwood or Trees in Mortality Process (TMP) followed Option 1, utilizing the allometric equation from VMD0002 v1.1 CP-AB (VCS, 2013). Sampling followed the

protocol for AVG trees component within 1200 m² units, recording trees with DBH of 10 cm or larger, measuring DBH, and tagging. For deadwood, maximum height and trunk decomposition degree were measured.

Two sampling methods were suggested for two classes of standing deadwood: i) initial stage individuals and ii) intermediate-advanced stage individuals. No individuals were classified in the initial stage due to identification difficulty. Standing dead trees were identified using a machete test and visual inspection. Wood densities and decomposition stages were considered for biomass estimation. The line interception method was used for lying dead trees. Fallen deadwood was classified by decomposition stage, and densities from literature were used.

The carbon stock of lying dead trees was estimated using the traditional line interception method (Van Wagner, 1968; VCS, 2010). Two 50-meter lines were established within the same Sampling Units (UAs) as those used for measuring living trees. Fallen dead trees with a diameter ≥ 10 cm were measured at the point of interception along these lines. The first line was positioned in alignment with the central axis of the field-based sample plots, while the second line was placed perpendicularly midway (25 meters) from the primary line.

The decomposition stage of woody material was classified as advanced or incipient. Density values for the decomposing material were determined using literature data relevant to tropical humid forests and the southern Amazon biome. Densities of fallen wood for different decomposition classes were 0.49 $g*cm^{-3}$, 0.41 $g*cm^{-3}$, and 0.34 $g*cm^{-3}$ for initial, intermediate, and advanced stages of decomposition, respectively (Cummings et al., 2002). A specific equation was applied to estimate standing and fallen deadwood volume per sampling unit (see details in Appendix IV - Carbon Pools).

Post-deforestation carbon stock in deadwood ($C_{DW,post,i}$) is set as zero as the project area is expected to be submitted to fire as part of the deforestation process. Fire is typically used as an instrument for clearing areas by deforestation agents in the Brazilian Amazon, acting by reducing the tree density due to mortality and eliminates the lower forest strata, facilitating subsequent access and forest cleaning (Barlow et al., 2012; Furtado Lima et al. 2024). Furtado Lima et al. (2024), for example, used data of fire alerts and deforestation from two public domain and free data sources (PRODES and BDQueimadas) over the last 20 years to evaluate the relationship between fire and deforestation in Amazonia and found a high correlation (R^2>0.7) between the two events throughout the time series, indicating the existence of a spatial relationship between fire and deforestation in the region.

Table 42. Baseline carbon stock change in dead wood biomass of PAIs #1-15 (t CO2e ha-1). (Table 19 from Appendix II – Calculus tables – 2551_MR3_CALCULUS_TABLE_INTEGRATED.xlsx).

Instance	Stratum (i)	$C_{DW,bsl,i}$	$C_{DW,post,i}$	$\Delta C_{DW,i}$
PAI #1	As	34.29	-	34.29
	Ds	22.40	-	22.40
PAIs #2-5	Aa	14.20	-	14.20
	Ab	8.60	-	8.60
PAI #6	Db	31.54	-	31.54
PAIs #7-15	D	39.03	-	39.03
	Ap	31.74	-	31.74

3.2.1.7 Litter

The baseline carbon stock change in litter ($\Delta C_{LI,i}$) was calculated according to the difference between the forest carbon stock in litter ($C_{LI,i}$) and the post-deforestation carbon stock in litter in stratum I ($C_{LI,post,i}$), according to VMD0006 v1.3 equation 11.

Forest carbon stock in litter ($C_{LI,bsl,i}$) is estimated based on field measurements of fixed area plots, according to VMD0003 v1.0 criteria. The estimation of biomass in the litter pool encompassed all above-ground vegetal material, including leaves, fruits, and dead branches below 10 cm in diameter. Sampling units mirrored those used for tree pools, with careful attention to stratification and sampling intensity. Litter samples were collected at the periphery of each unit to avoid disturbance, using a fixed sketch with PVC pipes to delineate sample areas of 1 x 1 meter. Four samples per unit were weighed for wet biomass, with one sample reserved for laboratory analysis after drying at room temperature for a week. Subsamples were taken for dry biomass determination, excluding ambient water, using a Perkin Elmer Model 2400 elemental analyzer and sent to the laboratory for carbon content analysis.

The dry biomass of litter provided the basis for estimating total carbon content as a percentage for each sample. This protocol for carbon stock measurement adhered to VMD0003 v1 CP-L guidelines, with applied equation for the calculation of average carbon dioxide equivalent (CO_2e) stock of the litter reservoir by stratum (see details in Appendix IV - Carbon Pools).

Post-deforestation carbon stock in litter ($C_{LI,post,i}$) is also set as zero as the project area is expected to be submitted to fire as part of the deforestation process.

Table 43. Baseline carbon stock change in litter pool of PAIs #1-15 (t CO2e ha-1). (Table 20 from Appendix II – Calculus tables – 2551_MR3_CALCULUS_TABLE_INTEGRATED.xlsx)

Instance	Stratum (i)	$C_{LI,bsl,i}$	$C_{LI,post,i}$	$\Delta C_{LI,i}$
PAI #1	As	19.06	-	19.06
	Ds	24.16	-	24.16
PAIs #2-5	Aa	9.49	-	9.49
	Ab	9.64	-	9.64

PAI #6	Db	24.16	-	24.16
PAIs #7-15	D	13.96	-	13.96
	Ap	12.78	-	12.78

3.2.1.8 Soil Organic Carbon (SOC)

The baseline carbon stock change in soil organic carbon ($\Delta_{SOC,i}$) was calculated according to the difference between the forest carbon stock in soil organic ($C_{SOC,bsl,i}$) and the post- deforestation carbon stock in soil organic carbon ($C_{SOC,PD-BSL,i}$), according to VMD0006 v1.3 equation.

Forest carbon stock in soil organic carbon ($C_{SOC,bsl,i}$) is estimated based on field measurements of fixed area plots, according to VMD0004 v1.0 criteria. Estimates of soil Organic Carbon Content followed the tree Forest Inventory's sample design, considering two distinct strata and forest typologies. The protocol, suggested by VMD0004_v1.0_CP_S, guided measurement in this reservoir. For soil C analysis, samples were taken with hand augers or soil augers, averaging 5 holes per 1 m^2 area for each depth. Two soil samples (0-20 cm and 20-40 cm) were collected per Sampling Unit (UA), totaling 256 samples. Samples were air-dried for a week and analyzed in the laboratory using a Perkin Elmer Model 2400 elemental analyzer. Soil density was calculated from samples taken with a cylindrical tube from 0-40 cm depth. Samples were stored, labeled, air-dried, and weighed for dry mass. From the dried soil biomass, total C content, in percentage, was estimated for each sample following VMD0004_v1.0 CP-S guidelines. Thus, equation was used to determined average C content stock, and converted C content into equivalent carbon dioxide (CO_2e) (see details in Appendix IV - Carbon Pools).

Table 44. Baseline carbon stock change in soil organic carbon pool of PAIs #1-15 (t CO2e ha-1). (Table 21 from Appendix II – Calculus tables – 2551_MR3_CALCULUS_TABLE_INTEGRATED.xlsx).

Instance	Stratum (i)	$C_{SOC,bsl,i}$	$C_{SOC,PD-BSL,i}$	$\Delta C_{SOC,i}$
PAI #1	As	75.58	68.02	7.56
	Ds	77.20	69.48	7.72
PAIs #2-5	Aa	120.11	108.10	12.01
	Ab	120.00	108.00	12.00
PAI #6	Db	84.72	76.25	8.47
PAIs #7-15	D	146.98	132.28	14.70
	Ap	145.80	131.22	14.58

The following equation was used to calculate the soil carbon stock in the post-deforestation context (degraded pasture). For the FLU factor, value of 1 was applied, as described in IPCC (2019).

For the FMG factor (management factor after conversion), value of 0.9 was used, as described by de Oliveira et al. (2022). This work by Oliveira et al. (2022) is a peer-reviewed scientific article based on a systematic review involving 160 bibliographic data in Brazil, with 49 articles specific to the Amazon region. The results of Oliveira et al. (2022) reveal that over a period of 30 years, degraded pastures show a 10% reduction in soil organic carbon (SOC) stock compared to forest areas.

$$C_{SOC,PD-BSL,i,t} = C_{SOCi,t=0} * F_{LU} * F_{MG}$$

Where:

$C_{SOC,PD-BSL,i,t}$ = Mean post-deforestation stock in soil organic carbon in the post deforestation baseline stratum i; t CO_2-e ha^{-1}.

$C_{SOCi,t=0}$= Mean carbon stock in soil organic carbon for stratum i, at time t=0; t CO_2-e ha^{-1}.

F_{LU} = land use factor before or after conversion; dimensionless.

F_{MG}= management factor before or after conversion; dimensionless.

i= 1, 2, 3, …M strata.

t= 1, 2, 3, …t years elapsed since the projected start of the REDD project activity.

3.2.2 Project Emissions (VCS, 3.15)

The net GHG emissions in the project case is equal to the sum of stock changes due to deforestation and forest degradation plus the total GHG emissions, minus any eligible forest carbon stock enhancement, according to VMD0015 v2.2, equation 01 (see section 4.2.5 of the validated PD). Data monitored during the third monitoring period is presented in the table below.

Table 45. Net GHG emissions in the REDD project scenario, in the instances where deforestation has occurred, up to year t* (t CO2-e) (ex-post). (Table 48 from "APPENDIX_CALCULUS-TABLES" - 2551_MR3_CALCULUS_TABLE_INTEGRATED.xsls)

Instance	Stratum (i)	$\Delta C_{P,DefPA,i,t}$	$\Delta C_{P,Deg,i,t}$	$\Delta C_{P,DistPA,i,t}$	$GHG_{P-E,i,t}$	$\Delta C_{P,Enh,i,t}$	$\Delta C_{WPS-REDD}$
PAI #1	**As**	-	-	-	-	-	-
PAI #1	**Ds**	-	-	-	-	-	-
PAI #2	**Aa**	1,109.54	4,325.59	92.15	5.87	-	5,533.14
PAI #2	**Ab**	364.37	-	97.36	6.28	-	468.00
PAI #3	**Aa**	2,384.32	945,25	841.91	53.65	-	4,225.12
PAI #3	**Ab**	-	378.58	-	-	-	378.58
PAI #4	**Aa**	5,429.64	1,724.45	917.30	58.45	-	8,129.84
PAI #4	**Ab**	13,268.99	2,235.96	2,951.69	190.36	-	18,647.00

PAI #5	**Aa**	599.62	-	247.13	15.75	-	862.50
PAI #5	**Ab**	-	-	-	-	-	-
PAI #6	**Db**	-	-	-	-	-	-
PAI #7	**D**	-	-	-	-	-	-
PAI #8	**D**	-	-	-	-	-	-
PAI #9	**D**	-	-	-	-	-	-
PAI #10	**D**	-	-	-	-	-	-
PAI #11	**D**	-	-	-	-	-	-
PAI #12	**D**	-	-	-	-	-	-
PAI #13	**Ap**	-	-	-	-	-	-
PAI #13	**D**	-	-	-	-	-	-
PAI #14	**D**	-	-	-	-	-	-
PAI #15	**Ap**	-	-	-	-	-	-
PAI #15	**D**	-	-	-	-	-	-

Carbon stock enhancement is conservatively assumed to be zero in all strata, following VMD0015 v2.2 step 02 criteria.

3.2.2.1 Deforestation in the Project Scenario

The area of recorded deforestation was measured through DETER data and visual interpretation of high spatial resolution satellite imagery from Sentinel. Only the PAI#2, PAI #3, PAI #4 and PAI #5 had activity data regarding the deforestation. The PAI #1 and PAI#6-15 hadn't any activity data regarding this monitoring aspect. The areas values identified are presented in the table below.

Table 46. Deforestation monitored in the project area in the third monitoring period (ex-post) (ha). (Table 49 from "APPENDIX_CALCULUS-TABLES" - 2551_MR3_CALCULUS_TABLE_INTEGRATED.xlsx)

Instance	Stratum	ADefPA,u,i,t
PAI #1	**As**	-
PAI #1	**Ds**	-
PAI #2	**Aa**	2.35
PAI #2	**Ab**	0.72
PAI #3	**Aa**	5.05
PAI #3	**Ab**	-
PAI #4	**Aa**	11.50
PAI #4	**Ab**	26.22
PAI #5	**Aa**	1.27
PAI #5	**Ab**	-
PAI #6	**Db**	-
PAI #7	**D**	-
PAI #8	**D**	-

PAI #9	**D**	-
PAI #10	**D**	-
PAI #11	**D**	-
PAI #12	**D**	-
PAI #13	**Ap**	-
PAI #13	**D**	-
PAI #14	**D**	-
PAI #15	**Ap**	-
PAI #15	**D**	-

The net carbon stock change because of deforestation in the project area in the project scenario is calculated according to VMD0015 v2.2, equation 03. The table below presents the net carbon stock change because of deforestation in the project area in the project scenario in the third monitoring period:

Table 47. Net carbon stock change because of deforestation in the project case in the first monitoring period (ex-post) (t CO2-e). (Table 50 from "APPENDIX_CALCULUS-TABLES" - 2551_MR3_CALCULUS_TABLE_INTEGRATED.xlsx)

Instance	ΔCP,DefPA,i,t
PAI #1	-
PAI #2	1,473.90
PAI #3	2,384.32
PAI #4	18,698.63
PAI #5	599.62
PAI #6	-
PAI #7	-
PAI #8	-
PAI #9	-
PAI #10	-
PAI #11	-
PAI #12	-
PAI #13	-
PAI #14	-
PAI #15	-
Total	23,156.47

3.2.2.2 Forest Degradation in the Project Scenario

3.2.2.2.1 TIMBER, FUELWOOD AND CHARCOAL COLLECTION IN THE PROJECT SCENARIO

The area of forests subjected to degradation due to timber, fuel wood and charcoal collection was defined through a 1 Km buffer ratio from each family house location in every community in PAIs#2-5 where the project areas have communities inside their boundaries. Forest degradation through timber, fuel wood and charcoal collection was disregarded in PAI #1 and PAI #6 to PAI #15, because no communities live in these areas.

Stumps were counted and measured in 8 sample plots A Pi (transects of 100 0mx40m) representing 2.07 % of $A_{degW,i}$. Biomass carbon of cut and removed trees from measured plots was estimated through the same allometric equations used to determine the above ground biomass in the tree component.

Net carbon stock changes as a result of degradation ($\Delta C_{P,DegW,i,t}$) was calculated according to VMD0015 v2.2, equation 08 and determined insignificant based on T SIG, third monitoring period.

The tables below present the area impacted by degradation processes of logging.

Table 48. Area impacted by degradation processes in stratum i in the third monitoring period (ex-post) (t CO_2-e). (Table 52 from "APPENDIX_CALCULUS-TABLES" - 2551_MR3_CALCULUS_TABLE_INTEGRATED.xsls)

Instance	Stratum (i)	$A_{DegW,i}$
PAI #1	**As**	-
PAI #1	**Ds**	-
PAI #2	**Aa**	365.02
PAI #2	**Ab**	206.55
PAI #3	**Aa**	318.51
PAI #3	**Ab**	21.93
PAI #4	**Aa**	599.91
PAI #4	**Ab**	1,583.59
PAI #5	**Aa**	605.85
PAI #5	**Ab**	15.80
PAI #6	**Db**	-
PAI #7	**D**	-
PAI #8	**D**	-
PAI #9	**D**	-
PAI #10	**D**	-
PAI #11	**D**	-

PAI #12	**D**	-
PAI #13	**Ap**	-
PAI #13	**D**	-
PAI #14	**D**	-
PAI #15	**Ap**	-
PAI #15	**D**	-

Table 49. Biomass carbon of trees cut and removed through degradation process from measured plots in stratum i in year t in the first monitoring period (ex-post) (t CO_2-e). (Table 53 from "APPENDIX_CALCULUS-TABLES" - 2551_MR3_CALCULUS_TABLE_INTEGRATED.xsls)

Instance	Stratum (j)	$C_{DegW,i,t}$
PAI #1	**As**	-
PAI #1	**Ds**	-
PAI #2	**Aa**	83.78
PAI #2	**Ab**	-
PAI #3	**Aa**	15.21
PAI #3	**Ab**	16.85
PAI #4	**Aa**	14.90
PAI #4	**Ab**	21.99
PAI #5	**Aa**	-
PAI #5	**Ab**	-
PAI #6	**Db**	-
PAI #7	**D**	-
PAI #8	**D**	-
PAI #9	**D**	-
PAI #10	**D**	-
PAI #11	**D**	-
PAI #12	**D**	-
PAI #13	**Ap**	-
PAI #13	**D**	-
PAI #14	**D**	-
PAI #15	**Ap**	-
PAI #15	**D**	-

Table 50. Net carbon stock change as a result of degradation in the project case in the first monitoring period (ex-post) (t CO_2-e). (Table 54 from "APPENDIX_CALCULUS-TABLES" - 2551_MR3_CALCULUS_TABLE_INTEGRATED.xsls)

Instance	$\Delta C_{P,DegW,i,t}$

PAI #1	-
PAI #2	4,325.59
PAI #3	1,323.82
PAI #4	3,960.41
PAI #5	-
PAI #6	-
PAI #7	-
PAI #8	-
PAI #9	-
PAI #10	-
PAI #11	-
PAI #12	-
PAI #13	-
PAI #14	-
PAI #15	-
Total	9,609.82

3.2.2.2.2 SELECTIVE LOGGING IN THE PROJECT SCENARIO

GHG emissions due to selective logging in the project scenario were zero. No forest management operations were held in any project instance in the third monitoring period. Ex-post estimates were done based on the GHG emissions arising in the logging gap, logging infrastructure and the carbon stock in wood products pool, according to VMD0015 v2.2, equation 09 (see section 4.2.2.2 of the validated PD)

3.2.2.3 Natural Disturbance in the Project Scenario

The area impacted by natural disturbance (A DistPA,q,i,t) is monitored and measured according to DETER database associated with direct observations. The area impacted by natural disturbance is proportionally reduced to reflect previous firewood/charcoal extraction (DDRF), in ex post estimates, according to VMD0015 v2.2, equation 19 (see section 4.2.3 of the validated PD). In the case the natural disturbance monitored is also related to wildfires, the area of natural disturbance is equal to the sum of the areas of all burn scars perceived in an annual basis, following VMD0015 v2.2, equations 22 and 21.

Only the PAI#2, PAI#3, PAI #4 and PAI #5 had activity data regarding the natural disturbances. The PAI #1 and PAI#6-15 didn´t have any activity data regarding this monitoring aspect. The disturbed areas identified per PAI are presented in the table below. The DDRF was constant to all PAIs.

Table 51. Area impacted by natural disturbances (ex post) (ha). (Table 66 from "APPENDIX_CALCULUS-TABLES" - 2551_MR3_CALCULUS_TABLE_INTEGRATED.xsls)

Instance/Stratum		$A_{DistPA,q,i,t}$
DDRF		-
PAI #1	As	-
PAI #1	Ds	-
PAI #2	Aa	0.22
PAI #2	Ab	0.22
PAI #3	Aa	2.01
PAI #3	Ab	-
PAI #4	Aa	2.19
PAI #4	Ab	6.67
PAI #5	Aa	0.59
PAI #5	Ab	-
PAI #6	Db	-
PAI #7	D	-
PAI #8	D	-
PAI #9	D	-
PAI #10	D	-
PAI #11	D	-
PAI #12	D	-
PAI #13	Ap	-
PAI #13	D	-
PAI #14	D	-
PAI #15	Ap	-
PAI #15	D	-

Carbon stock changes in all pools as a result of natural disturbance (CP,Dist,q,i) is calculated according to VMD0015 v2.2, equation 24. Net carbon stock changes in pools because of natural disturbance is calculated according to VMD0015 v2.2, equation 23.

GHG emissions resulting from areas undergoing natural disturbance are calculated according to VMD0015 v2.2, equation 20. Data calculated for the PAIs which had activity data in the third monitoring period are presented in the table below.

Table 52. Net carbon stock change as a result of natural disturbance in the project case in the project area in stratum i in year t (t CO2-e ha-1) (ex post). (Table 67 from "APPENDIX_CALCULUS-TABLES" - 2551_MR3_CALCULUS_TABLE_INTEGRATED.xsls)

Instance	Stratum (i)	$A_{DistPA,q,i,t}$	$\Delta C_{P,Dist,q,i,t}$	$\Delta C_{P,DistPA,i,t}$
PAI #1	**As**	-	482.67	-
PAI #1	**Ds**	-	516.76	-
PAI #2	**Aa**	0.22	418.86	92.15
PAI #2	**Ab**	0.22	442.53	97.36
PAI #3	**Aa**	2.01	418.86	841.91
PAI #3	**Ab**	-	442.53	-
PAI #4	**Aa**	2.19	418.86	917.30
PAI #4	**Ab**	6.67	442.53	2,951.69
PAI #5	**Aa**	0.59	418.86	247.13
PAI #5	**Ab**	-	442.53	-
PAI #6	**Db**	-	544.30	-
PAI #7	**D**	-	662.81	-
PAI #8	**D**	-	662.81	-
PAI #9	**D**	-	662.81	-
PAI #10	**D**	-	662.81	-
PAI #11	**D**	-	662.81	-
PAI #12	**D**	-	662.81	-
PAI #13	**Ap**	-	427.91	-
PAI #13	**D**	-	662.81	-
PAI #14	**D**	-	662.81	-
PAI #15	**Ap**	-	427.91	-
PAI #15	**D**	-	662.81	-

3.2.2.4 Non-CO2 Emissions in the Project Scenario

Burn scars from wildfires ($A_{burn,q,i,t}$) are measured according to ΔNBR ΔNBR47 spectral index and verified with high spatial resolution satellite imagery from Sentinel, along with ground verifications (see section 4.2.3 of the validated PD).

Only the PAI#2, PAI#3, PAI #4 and PAI #5 had activity data regarding the burned areas. The PAI #1 and PAI#6-15 didn´t have any activity data regarding this monitoring parameter. The areas' values identified are presented in the table below.

The average aboveground biomass stock before burning (Bi,t) is calculated according to VMD0013 v1.2, equation 2 (see section 4.2.4 of the validated PD). Non-CO_2 emissions due to biomass burning are calculated according to VMD0013 v1.2, equation 1 (see section 4.2.4 of the validated PD). Data calculated for the third monitoring period is presented in the table below.

Table 53. Greenhouse gas emissions due to biomass burning in stratum i in year t of each GHG (CO_2, CH_4, N_2O) (t CO_2e). (Tables 68, 69 and 70 from "APPENDIX_CALCULUS-TABLES" - 2551_MR3_CALCULUS_TABLE_INTEGRATED.xsls)

Instance	Stratum (i)	Aburn,i,t	Bi,t	COMFi	Ebiomassburn,i,t
#01	As	-	314.09	0.45	-
#01	Ds	-	291.06	0.45	-
#02	Aa	0.22	243.67	0.45	5.87
#02	Ab	0.22	260.57	0.45	6.28
#03	Aa	2.01	243.67	0.45	53.65
#03	Ab	-	260.57	0.45	-
#04	Aa	2.19	243.67	0.45	58.45
#04	Ab	6.67	260.57	0.45	190.36
#05	Aa	0.59	243.67	0.45	15.75
#05	Ab	-	260.57	0.45	-
#06	Db	-	305.98	0.45	-
#07	D	-	351.77	0.45	-
#08	D	-	351.77	0.45	-
#09	D	-	351.77	0.45	-
#10	D	-	351.77	0.45	-
#11	D	-	351.77	0.45	-
#12	D	-	351.77	0.45	-
#13	Ap	-	351.77	0.45	-
#13	D	-	351.77	0.45	-
#14	D	-	351.77	0.45	-
#15	Ap	-	351.77	0.45	-
#15	D	-	351.77	0.45	-

GHG emissions from fossil fuels and nitrogen application were conservatively excluded following VM0007 v1.6, table 06, criteria. Non CO2 emissions due to biomass burning in stratum i in year t E

$_{BiomassBurn,i,t}$) is equal to Greenhouse gas emissions as a result of deforestation activities within the project area in the project case in stratum i in year t GHG $_{P,E,i,t}$.

3.2.3 Leakage Emissions (VCS, 2.5, 3.2, 3.6, 3.15, 4.3)

GHG emissions due to leakage are based on activity shifting and market effects leakage throughout the project lifetime. Leakage emissions are determined according to VMD0007 v1.6 equation 4 (see section 4.3 of the validated PD). Data calculated for the third monitoring period is presented in the table below.

Table 54. Net GHG emissions due to leakage from the REDD project activity (t CO2-e) (ex-post). (Table 71 from "APPENDIX_CALCULUS-TABLES" - 2551_MR3_CALCULUS_TABLE_INTEGRATED.xsls)

Year	$\Delta C_{LK-AS,planned}$	ΔC_{LK-ME}	$\Delta C_{LK-REDD}$
2023	46,677	85,303	131,980

3.2.3.1 Activity Shifting Leakage

GHG leakage emissions due to activity shifting from forest lands that are legally authorized and documented to be converted to non-forest land were estimated following VMD0009 v1.3 criteria.

The total area of monitored deforestation (AdefLK,i,t) by the baseline agent of the planned deforestation in stratum i in year t (ha) was estimated through remote sensing. The new calculated forest clearance (NewRi,t) by the baseline agent of the planned deforestation in the project scenario was conservatively configured as zero, in this way, all deforestation occurring outside the project boundaries was considered as project leakage. The area of activity shifting leakage (LKAplanned,i,t) is determined according to VMD0009 v1.3, equation 06. Data calculated for the third monitoring period are presented in the table below. GHG emissions due to leakage are defined according to VMD0009 v1.3, equation 01. Data calculated for the third monitoring period are presented in the table below.

Table 55. The area (AdefLK, I,t) and emissions (GHGLK,E,i, and ΔCLK-AS,planned) related to activity shifting leakage in the monitoring period in stratum i (ex-post). (Table 71_LK_AS_total from "APPENDIX_CALCULUS-TABLES" - 2551_MR3_CALCULUS_TABLE_INTEGRATED.xsls)

Instances	Stratum	AdefLK,i,t	NewRi,t	LKAplanned,i,t	ΔCBSL,i	GHGLK,E,i,	ΔCLK-AS,planned
PAIs #1-5	Ab	51	-	51	506	1,459	27,324
	Aa	8	-	8	472	206	3,841

	As	14	-	14	603	475	8,814
	Fs	18	-	18	351	364	6,698
PAIs #6-15	-	-	-	-	-	-	-
Total		**91**	**-**	**91**	**1,933**	**2,504**	**46,677**

In the following table, it's possible to identify properties which are monitored as part of the leakage management plan, their geographical coordinates according to each instance.

Table 56. Properties subject to Leakage Monitoring.

PAI	ID	Properties	Area (ha)	City	State	Landowners/ Partnership	Coordinates	
							X	Y
#1-5	1	Lote 23B Gleba Aliança- Projeto Fundiário Alto do Madeira	101.74	Porto Velho	RO	Junior Galvane Batista	-63.75	-8.60
#1-5	2	-	477.60	Buritis	RO	Domingos Angelo Debarba	-64.12	-10.11
#1-5	3	-	685.73	Vilhena	RO	Junior Galvane Batista	-60.32	-12.67
#1-5	4	Lote 19 19-A/R, Gleba Lote 30, Setor 12, Gleba Corumbiara	1014.63	Vilhena	RO	Junior Galvane Batista	-60.09	-12.56
#1-5	5	Fazenda Nova Esperança	1089.01	Ipixuna	AM	BATISTA & CIA LTDA	-71.81	-7.12
#1-5	6	Lote 33-C, Linha 125, Setor 12, Gleba Corumbiara	1389.17	Vilhena	RO	Junior Galvane Batista	-60.35	-12.61
#1-5	7	Fazenda Chapadão	1579.54	Vilhena	RO	Moacir Eloy Corecetta	-60.18	-12.83
#1-5	8	Lote 44-R, Linha 125, Setor 12, Gleba Corumbiara	1626.17	Vilhena	RO	Junior Galvane Batista	-60.32	-12.64
#1-5	9	-	1933.75	Chupinguaia	RO	Moacir Eloy Corecetta	-60.87	-12.51

PAI	ID	Properties	Area (ha)	City	State	Landowners/ Partnership	Coordinates	
							X	Y
#1-5	10	Lote 03 Setor 02 Gleba Corumbiara	1966.81	Vilhena	RO	Junior Galvane Batista	-60.36	-12.47
#1-5	11	-	2011.40	Chupinguaia	RO	M. I. INCORPORADORA LTDA	-60.87	-12.20
#1-5	12	Faz Lealdade	2119.35	Ipixuna	AM	BATISTA & CIA LTDA	-72.06	-7.16
#1-5	13	Gleba C1	2166.46	Canutama	AM	MPRV COMPRA E VENDA, GESTAO E LOCACAO DE IMOVEIS LTDA	-63.83	-8.15
#1-5	14	-	2193.05	Acrelândia	AC	Domingos Angelo Debarba	-66.85	-10.06
#1-5	15	Lote 01(A ao C) Gleba Marmelo P.F Alto Madeira	2910.93	Porto Velho	RO	Junior Galvane Batista	-65.78	-9.62
#1-5	16	Lotes, Setor 08, Gleba Corumbiara	7809.45	Vilhena	RO	Junior Galvane Batista	-60.31	-12.38
#1-5	17	-	11991.95	Rio Preto da Eva	AM	Domingos Angelo Debarba	-59.66	-2.24
#1-5	18	Gleba Antonieta Ataíde	14031.20	Humaitá	AM	INCORPORADORA IMOBILIARIA PORTO VELHO LTDA	-63.16	-7.66
#1-5	19	-	27647.81	Ipixuna	AM	BATISTA & CIA LTDA	-71.92	-7.10
#1-5	20	Imóvel João de Barro	86062.30	Borba	AM	M. I. INCORPORADORA LTDA	-58.82	-5.30

PAI	ID	Properties	Area (ha)	City	State	Landowners/ Partnership	Coordinates	
							X	Y
#1-5	21	Seringal Macapá (Fazenda Novo Macapá)	190099.72	Pauini	AM	BATISFLOR FLORESTAL LTDA	-69.06	-8.46
#6	22	Lote 14	191.60	Parecis	RO	Incorporadora Manicoré LTDA	-61.57	-12.45
#6	23	Lote 74-A	306.02	Parecis	RO	Incorporadora Manicoré LTDA	-61.55	-12.44
#6	24	Lotes 76 e 78	667.28	Alto Alegre dos Parecis	RO	Incorporadora Manicoré LTDA	-61.55	-12.54
#6	25	Lotes 66, 67, 68	1115.95	Alto Alegre dos Parecis	RO	Incorporadora Manicoré LTDA	-61.59	-12.52
#6	26	Lotes 73, 74, 75	1415.21	Alto Alegre dos Parecis	RO	Incorporadora Manicoré LTDA	-61.57	-12.51
#6	27	Lote 64-A, Linha 135, Setor 12, Gleba Corumbiara	1653.78	Vilhena	RO	Luiz Rogerio de Oliveira	-60.32	-12.73
#6	28	Lote 11	1989.25	Alto Alegre dos Parecis	RO	Incorporadora Manicoré LTDA	-61.53	-12.52
#7-8	29	Faz Várzea Alegre	2173.96	Rondon do Pará	PA	Bruno Machado	-48.00	-2.76
#9	30	Faz G3	164.99	Goianésia do Pará	PA	Adao Ribeiro	-49.39	-4.31
#9	31	Faz Canaã V	189.09	Goianésia do Pará	PA	Adao Ribeiro	-49.22	-4.17
#9	32	Faz Paraúna	378.48	Goianésia do Pará	PA	Adao Ribeiro	-49.33	-4.45

PAI	ID	Properties	Area (ha)	City	State	Landowners/ Partnership	Coordinates	
							X	Y
#9	33	Faz Lua Cheia	451.21	Goianésia do Pará	PA	Adao Ribeiro	-49.21	-4.09
#9	34	Faz Parauná I II	1246.68	Jacundá	PA	Adao Ribeiro	-49.31	-4.49
#9	35	Faz Ribeiro	2193.11	Rondon do Pará	PA	Adao Ribeiro	-48.86	-3.93
#9	36	Faz União	6910.83	Rondon do Pará	PA	Adao Ribeiro	-48.77	-4.24
#9	37	Faz Cajueiro	18905.55	Rondon do Pará	PA	Adao Ribeiro	-48.51	-4.27
#10-15	38	Faz Chapadão	598.39	Ulianópoilis	PA	Floraplac	-47.53	-4.03
#10-15	39	Faz Yollanda	724.02	Ipixuna do Pará	PA	Floraplac	-48.33	-3.21
#10-15	40	Faz São Pedro	1018.94	Centro Novo do Maranhão	MA	Floraplac	-46.78	-3.65
#10-15	41	Faz Serra Verde	1049.04	Centro Novo do Maranhão	MA	Floraplac	-46.82	-3.67
#10-15	42	Faz Santa Barbara	1101.75	Centro Novo do Maranhão	MA	Floraplac	-46.86	-3.36
#10-15	43	Faz Floraplac III	1102.35	Centro Novo do Maranhão	MA	Floraplac	-46.82	-3.63
#10-15	44	Faz Santa Catarina I	1104.40	Centro Novo do Maranhão	MA	Floraplac	-46.64	-3.61
#10-15	45	Faz Santa Catarina	1128.54	Centro Novo do Maranhão	MA	Floraplac	-46.66	-3.60
#10-15	46	Faz Juquiral Parte II	1146.00	Tomé-Açu	PA	Floraplac	-48.15	-2.79

PAI	ID	Properties	Area (ha)	City	State	Landowners/ Partnership	Coordinates	
							X	Y
#10-15	47	Faz MinasGerais	1151.37	Centro Novo do Maranhão	MA	Floraplac	-46.64	-3.23
#10-15	48	Faz Santa Maria	1226.74	Centro Novo do Maranhão	MA	Floraplac	-46.66	-3.29
#10-15	49	Faz Nossa Senhora de Fatima	1319.62	Centro Novo do Maranhão	MA	Floraplac	-46.64	-3.37
#10-15	50	Faz Santo Agostinho	1398.59	Centro Novo do Maranhão	MA	Floraplac	-46.75	-3.57
#10-15	51	Faz Sta Agostinho	1400.24	Centro Novo do Maranhão	MA	Floraplac	-46.77	-3.56
#10-15	52	Faz D'Graus VII	1472.12	Tomé-Açu	PA	Floraplac	-48.34	-3.16
#10-15	53	Faz Andiroba	1494.60	Centro Novo do Maranhão	MA	Floraplac	-46.69	-3.66
#10-15	54	Faz Pau D'arco	1495.88	Centro Novo do Maranhão	MA	Floraplac	-46.70	-3.68
#10-15	55	Faz Sucupira	1497.91	Centro Novo do Maranhão	MA	Floraplac	-46.68	-3.65
#10-15	56	Faz Santa Terezinha	1681.14	Centro Novo do Maranhão	MA	Floraplac	-46.72	-3.60
#10-15	57	Faz Monteiro	1870.29	Centro Novo do Maranhão	MA	Floraplac	-46.96	-3.52

PAI	ID	Properties	Area (ha)	City	State	Landowners/ Partnership	Coordinates	
							X	Y
#10-15	58	Faz Jatoba	2008.25	Centro Novo do Maranhão	MA	Floraplac	-46.67	-3.63
#10-15	59	Faz Ibituruna	2045.62	Paragominas	PA	Floraplac	-47.53	-3.06
#10-15	60	Faz Nossa Senhora Aparecida	2201.07	Centro Novo do Maranhão	MA	Floraplac	-46.73	-3.24
#10-15	61	Faz D'Graus V	2482.34	Ipixuna do Pará	PA	Floraplac	-48.52	-3.26
#10-15	62	Faz Rio Concrem I	2526.10	Dom Eliseu	PA	Floraplac	-47.56	-4.18
#10-15	63	Faz Coutinho Gonçalvez	2544.43	Centro Novo do Maranhão	MA	Floraplac	-46.72	-3.22
#10-15	64	Faz Jacu	2690.18	Centro Novo do Maranhão	MA	Floraplac	-46.74	-3.72
#10-15	65	Faz Belo Horizonte	2696.08	Centro Novo do Maranhão	MA	Floraplac	-46.68	-3.25
#10-15	66	Faz Ipanema	2947.81	Centro Novo do Maranhão	MA	Floraplac	-46.74	-3.69
#10-15	67	Faz D'Graus III	3640.33	Tomé-Açu	PA	Floraplac	-48.29	-3.17
#10-15	68	Faz Parana	3907.03	Paragominas	PA	Floraplac	-46.84	-2.94
#10-15	69	Faz D'Graus IV	4182.01	Tomé-Açu	PA	Floraplac	-48.29	-3.10
#10-15	70	Faz Capinzal II	4186.88	Ulianópoilis	PA	Floraplac	-47.92	-3.76
#10-15	71	Faz Juquiral	4309.89	Tomé-Açu	PA	Floraplac	-48.18	-2.80

3.2.3.2 Market Effects Leakage

Leakage factor for market effects calculations (LF_{ME}) is calculated according to VMD0011 v1.0 criteria (see section 4.3.2).

Carbon emission due to displaced timber harvests in the baseline scenario ($C_{BSL,XBT,i,t}$) is calculated according to VMD0011 v1.0 equation 4. Summed emissions from timber harvest potentially displaced through implementation of carbon project $AL_{T,i}$ is estimated according to VMD0011 v1.0 equation 3. Market Effects Leakage Through Decreased Timber Harvest $LK_{MarketEffects,timber}$ is estimated according to VMD0011 v1.0 equation 2.

Carbon emission due to displaced fuelwood/charcoal harvests in the baseline scenario is calculated according to VMD0011 v1.0 equation 7. Summed emissions from fuelwood/charcoal harvests in the baseline case potentially displaced through project implementation ($AL_{FW/C,i}$) is calculated according to VMD0011 v1.0 equation 6. Market Effects Leakage Through Decreased Harvest of Fuelwood and Charcoal Sold into Regional and/or National Markets ($LK_{MarketEffects,FW/C}$) are calculated according to VMD0011 v1.0 equation 5.

GHG emissions from market effects ΔC_{LK-ME} are calculated according to VMD0011 v1.0 equation 1 Data calculated for the third monitoring period are presented in the table below.

Table 57. Net greenhouse gas emissions due to market- effects leakage (t CO_2-e) (ex post). (Table 74 from "APPENDIX_CALCULUS-TABLES" - 2551_MR3_CALCULUS_TABLE_INTEGRATED.xsls)

Year	$V_{BSL,EX,i,t}$	$FG_{BSL,t}$	$LK_{MarketEffects,timber}$	$LK_{MarketEffects,FW/C}$	ΔC_{LK-ME}
2023	100,095	11,193	83,331	1,972	85,303

3.2.4 GHG Emission Reductions and Carbon Dioxide Removals (VCS, 3.15, 4.1)

3.2.4.1 Total Net GHG Emission Reduction

Net GHG emission reduction estimates are based in VM0007 v1.6 equation 2 (see section 4.4.1). Data calculated for the third monitoring period is presented in the table below.

Table 58. Total net GHG emission reductions of the REDD project activity (t CO_2e) (ex-post). (Table 75 from "APPENDIX_CALCULUS-TABLES" - 2551_MR3_CALCULUS_TABLE_INTEGRATED.xsls)

Year	Baseline emissions or removals	Project emissions or removals	Leakage emissions	Net GHG emission reductions or removals
	ΔCBSL-REDD	**ΔCWPS-REDD**	**ΔCLK-REDD**	**NER_{REDD}**
2023	2,475,530	38,244	131,980	2,305,305

Table 59. Non-Permanence Risk

State the non-permanence risk rating (%)	12%
Has the non-permanence risk report been attached as either an appendix or a separate document?	☒ Yes ☐ No
For ARR and IFM projects with harvesting, state, in tCO2e, the Long-term Average (LTA).	Not applicable
Has the LTA been updated based on monitored data, if applicable?	☐ Yes ☐ No Not applicable
State, in tCO2e, the expected total GHG benefit to date.	2,305,305 tCO2e
If a loss occurred (including a loss event or reversal), state the amount of tCO2e lost:	Project loss was not significant in this monitoring period.

Table 60. Net GHG emissions/reductions for ex-post ER from project start date to current monitoring period.

Vintage period	Baseline emissions (tCO_2e)	Project emissions (tCO_2e)	Leakage emissions (tCO_2e)	Buffer pool allocation (tCO_2e)	Reductions VCUs (tCO_2e)	Removals VCUs (tCO_2e)
01-Jan-2021 to 31-Dec-2021	1,046,265	107,006	41,474	93,925	803,858	0
01-Jan-2022 to 31-Dec-2022	2,733,520	139,621	135,604	259,390	2,198,904	0
01-Jan-2023 to 31-Dec-2023	2,475,530	38,244	131,980	292,474	2,012,831	0
Total	6,255,315	284,871	309,058	645,789	5,015,593	0

Table 61 shows the estimated ex-ante GHG emission reductions and the achieved reductions and removals for the monitoring period, the percentage difference between them and a explanation about the differences. Ex-ante GHG emission reduction estimates are made for the PD elaboration and take into account the projected deforestation in the project area in the baseline scenario, projections of unplanned unavoided deforestation in the project area, projections of deforestation in the leakage belt due to activity shifting leakage in the baseline scenario, GHG emissions due to market leakage, and deductions for uncertainty throughout the project life time. Ex-post GHG emission reduction estimates are made when preparing the MR and take into account the projected deforestation in the project area in the baseline scenario, the monitored and verified unplanned unavoided deforestation in the project area in the project scenario, the monitored and verified deforestation in the leakage belt due to activity shifting leakage in the project scenario, GHG emissions due to market leakage, and deductions for uncertainty during the monitored period. Since ex-ante and ex-post estimates are annualized, annual comparisons are possible. Differences between ex-ante and ex-post estimates can be explained by the observed deforestation rates in the project scenario in the project area and in the leakage belt.

Table 61. Ex-ante/achieved reductions/removals. Ex-ante estimated reductions refers to the emissions expected to be avoided in the baseline scenario, while achieved reductions are the observed reductions in the monitoring period.

Vintage period	Ex-ante estimated reductions/ removals	Achieved reductions/ removals	Percent difference	Explanation for the difference
01-Jan-2023 to 31-Dec-2023	2,356,638	2,305,305	-2.23%	Project emissions by deforestation in project area and in the leakage properties.
Total	2,356,638	2,305,305	-2.23%	Same as above

3.2.4.2 Calculation of AFOLU Pooled Buffer Account Contribution

Buffer is calculated through VM0007 v1.6 equation 8 (see section 4.4.2). Buffer withholding percentage is calculated according to AFOLU Non-Permanence Risk Tool v4.2 (APPENDIX_RISK-REPORT). The overall non permanence risk rating is presented in the table below:

Table 62. Overall Risk Rating for the third monitoring period.

Risk Category		Rating
a)	Internal risk	0.00
b)	External risk	0.00
c)	Natural Risk	7.50
Overall risk rating (a + b + c)		**12**

3.2.4.3 Uncertainty Analysis

Uncertainty in baseline rate of deforestation is set as zero ($Uncertainty_{BSL,RATE}$= 0), as the deforestation rates are based on actual deforestation plans, following VMD0017 v2.2, sections 5.1.1 and 5.1.2 criteria. Uncertainty in the combined carbon stocks and greenhouse gas sources in the REDD baseline scenario is estimated according to VMD0017 v2.2 equation 5. The total error in the

REDD+ project activity is therefore calculated by VMD0017 v2.2 equation 21[23] . The $U_{REDD\text{-}BSl,SS}$ parameter through equation 4 from VMD0017 v2.2 section 5.1.2 as described below:

$$U_{REDD-BSL,SS,i} = \frac{\sqrt{\sum_1^n \left(U_{REDD-BSL,SS,i,pool\#} \times E_{REDD-BSL,SS,i,pool\#}\right)^2}}{\sum_1^n E_{REDD-BSL,SS,i,pool\#}}$$

Where:

$U_{REDD-BSL,SS,i}$	Percentage uncertainty in the combined carbon stocks and greenhouse gas sources in the REDD baseline scenario in stratum i (%).
$U_{REDD-BSL,SS,i,pool\#}$	Percentage uncertainty for carbon stocks and greenhouse gas sources in the REDD baseline scenario in stratum i (%)
$E_{REDD-BSL,SS,i,pool\#}$	Carbon stock or GHG sources in the REDD baseline scenario (t CO_2e)
i	1, 2, 3 …M strata (unitless)

In this sense, carbon stocks and uncertainties from all relevant pools (CAB_tree,bsl,i; CBB_tree,bsl,i; CAB_non-tree, bsl,i; CBB_non-tree,bsl,i; CDW,bsl,i; CLI,bsl,i; CSOC,bsl,i) were taken into account (EREDD_BSL,SS,i,pool# and UREDD_BSL,SS,i,pool#, respectively). Thus, uncertainty across combined strata is assessed as follows (equation 5):

$$Uncertainty_{REDD-BSL,SS} = \frac{\sqrt{\sum_{i=1}^{M} \left(U_{REDD-BSL,SS,i} \times E_{REDD-BSL,SS,i}\right)^2}}{\sum_{i=1}^{M} E_{REDD-BSL,SS,i}}$$

Where:

[23] Here suitable not to show values related to WRC project activities, which were not included in the scope of this project.

$Uncertainty_{REDD-BSL,SS}$	Total uncertainty in the combined carbon stocks and greenhouse gas sources in the REDD baseline scenario (%).
$U_{REDD-BSL,SS,i}$	Percentage uncertainty in the combined carbon stocks and greenhouse gas sources in the REDD baseline scenario (%)
$E_{REDD-BSL,SS,t,i}$	Carbon stock or GHG sources in the REDD baseline scenario (t CO_2e)
i	1, 2, 3 …M strata (unitless)

The table below is the result of both applied equations early described per PAI and forest classes. The percentage uncertainty in the combined carbon stocks and greenhouse gas sources were calculated as the 95% confidence interval half width as a percentage of the mean (see Appendix IV - Carbon Pools Measures).

Table 63. Combined uncertainty of emissions and removals in project area in baseline scenario.

Carbon pool	Measure (VMD0017 v2.2, sections 5.1.1 and 5.2.2)	PAI #1		PAI #2-05		PAI #6	PAI#7-15	
		As	Ds	Aa	Ab	Db	D	Ap
CAB_tree,bsl,i	EREDD_BSL,SS,i,pool#	456.26	447.23	369.94	402.00	463.74	543.65	306.37
	UREDD_BSL,SS,i,pool#	7.0%	7.0%	7.0%	7.0%	11.0%	5.0%	5.0%
CBB_tree,bsl,i	EREDD_BSL,SS,i,pool#	45.61	138.65	36.98	40.19	143.77	168.55	-94.99
	UREDD_BSL,SS,i,pool#	7.0%	7.0%	7.0%	7.0%	11.0%	5.0%	5.0%
CAB_non-tree,bsl,i	EREDD_BSL,SS,i,pool#	33.83	8.71	24.60	28.03	9.59	13.82	1.25
	UREDD_BSL,SS,i,pool#	7.0%	7.0%	7.0%	7.0%	11.0%	5.0%	5.0%
$C_{BB\_non-tree,bsl,i}$	EREDD_BSL,SS,i,pool#	6.77	1.74	4.92	5.61	1.92	2.76	0.25

	UREDD_BSL,SS,i,pool#	7.0%	7.0%	7.0%	7.0%	11.0%	5.0%	5.0%
$C_{DW,bsl,i}$	EREDD_BSL,SS,i,pool#	34.29	22.4	14.2	8.6	31.5418	39.03	31.74
	UREDD_BSL,SS,i,pool#	34.0%	34.0%	21.0%	21.0%	11.0%	13.0%	13.0%
$C_{LI,bsl,i}$	EREDD_BSL,SS,i,pool#	19.06	24.16	9.49	9.64	24.16	13.96	12.78
	UREDD_BSL,SS,i,pool#	7.0%	7.0%	8.0%	8.0%	7.0%	7.0%	7.0%
$C_{SOC,bsl,i}$	EREDD_BSL,SS,i,pool#	7.56	7.72	12.01	12.00	8.47	14.7	14.58
	UREDD_BSL,SS,i,pool#	8.0%	8.0%	8.0%	8.0%	7.0%	8.0%	8.0%
	$UncertaintyREDD-BSL,SS$	**0.6%**						

Total Uncertainty in REDD baseline scenario is estimated according to VMD0017 v2.2 equation 6 as follows.

$$Uncertainty_{REDD-BSL,t*} = \sqrt{Uncertainty_{BSL,RATE,t*}{}^2 + Uncertainty_{REDD-BSL,SS}{}^2}$$

Where:

$Uncertainty_{REDD-BSL,t*}$	Cumulative uncertainty in REDD baseline scenario up to year t* (%)
$Uncertainty_{REDD-BSL,RATE,t*}$	Cumulative uncertainty in the baseline rate of deforestation up to year t (%)
$Uncertainty_{REDD-BSL,SS}$	Total uncertainty in the combined carbon stocks and greenhouse gas sources in the REDD baseline scenario (%)
t	1, 2, 3, …t* time elapsed since the start of the project activity (years)

Deductions are made in the case total error in the REDD+ project activity exceeds 15% of NER_{REDD} at the 95% confidence level according to VMD0017 v2.2 equation 21. No WRC activities have been included, therefore intrinsic expressions within the squared root of equation 21 were suppressed from its original structure (see equation below). As result, data calculated for the third monitoring period are presented in further table.

$$NER_{REDD+ERROR} = \sqrt{\left(Uncertainty_{REDD_{BSL,t*}} \times \Delta C_{BSL-REDD,t*}\right)^2 + \left(Uncertainty_{REDD_{WPS}} \times \Delta C_{WPS-REDD,t*}\right)^2 \times \left(\frac{1}{\Delta C_{BSL-REDD,t*} + \Delta C_{WPS-REDD,t*}}\right)}$$

Where:

$NER_{REDD+ERROR}$	Cumulative uncertainty for the REDD+ (REDD and WRC) project activities up to year t* (%)
$Uncertainty_{REDD_{BSL},t*}$	Cumulative uncertainty in REDD baseline scenario up to year t (%)
$Uncertainty_{REDD_{WPS}}$	Total uncertainty in the REDD project scenario (%)
$\Delta C_{BSL-REDD,t*}$	Net GHG emissions in the REDD baseline scenario up to year t* (t CO_2e)
$\Delta C_{WPS-REDD,t*}$	Net GHG emissions in the REDD project scenario up to year t* (t CO_2e)
t	1, 2, 3, …t* time elapsed since the project start (year)

Table 64. Total net GHG emission reductions of the REDD+ project activities up to year t*adjusted to account for uncertainty (t CO2e) (ex-post). (Table 77 from "APPENDIX_CALCULUS-TABLES" - 2551_MR3_CALCULUS_TABLE_INTEGRATED.xsls)

Year	NER_{REDD}	NER_{REDD+_ERROR}	$Adjusted\_NER_{REDD+}$

2023	2,305,305	173,294	2,305,305
Total	**2,305,305**	**173,294**	**2,305,305**

The Adjusted_NER_{REDD+} presented in the previous table is based on VMD0017 v2.2 equation 22. The equation terms which refer ARR and WRC activities were also removed from original structure (NGR_{ARR} and NER_{WRC}). The original equation is described as follow:

$$Adjusted\_NER_{REDD+} = NGR_{ARR} + (NER_{REDD} + NER_{WRC}) \times (100\% - NER_{REDD+ERROR} + 15\%)$$

Where:

$Adjusted\_NER_{REDD+}$	Total net GHG emission reductions of the REDD+ project activities up to year t* adjusted to account for uncertainty (t CO_2e)
NGR_{ARR}	Total net GHG removals of the ARR project activity up to year t* (t CO_2e)
NER_{REDD}	Total net GHG emission reductions of the REDD project activity up to year t* (t CO_2e)
NER_{WRC}	Total net GHG emission reductions of the WRC project activity up to year t* (tCO_2e)
$NER_{REDD+ERROR}$	Cumulative uncertainty for the REDD+ (REDD and WRC) project activities up to year t* (%)

3.2.4.4 Calculation of Verified Carbon Units

Total number of Verified Carbon Units (VCUs) generated by the project activity implementation is estimated (ex-ante) according to VM0007 v1.6 equation19 (see section 4.4.4 of the validated PD). The initial of the third monitoring period is from 1st January 2023 until 31st December 2023, according with the VCS registration and Issuance process v4.2, section 4.1.2.

Data calculated for the third monitoring period are presented in the table below.

Table 65. Number of Verified Carbon Units (VCU) (ex-post). (Table 78 from "APPENDIX_CALCULUS-TABLES" - 2551_MR3_CALCULUS_TABLE_INTEGRATED.xsls)

Year	Adjusted_NER_{REDD+}	$Buffer_{Planned}$	VCU_t
2023	2,305,305	292,474	2,012,831
Total	**2,305,305**	**292,474**	**2,012,831**

3.2.5 Risk of abandonment

The proxy areas were selected according to the conditions presented in section 5.1.5 of VMD0006.

The risk of abandonment is considered based on the proxy areas by the same class of deforestation agent over a 10-year interval. The selection of these areas considered rural properties in the rural environmental registry located in the same municipality as the boundaries of the project property.

A total of 28 proxy areas were selected, covering at least 5 rural properties for the region from PAI #10 to PAI #15 in Dom Eliseu, Ipixuna do Pará, Paragominas, Rondon do Pará and Tomé-Açú, all in the state of Pará.

The maps show the location of the proxy areas around the PAIs and the land use in 2013 and 2023, demonstrating that economic activities have remained the same over the last 10 years.

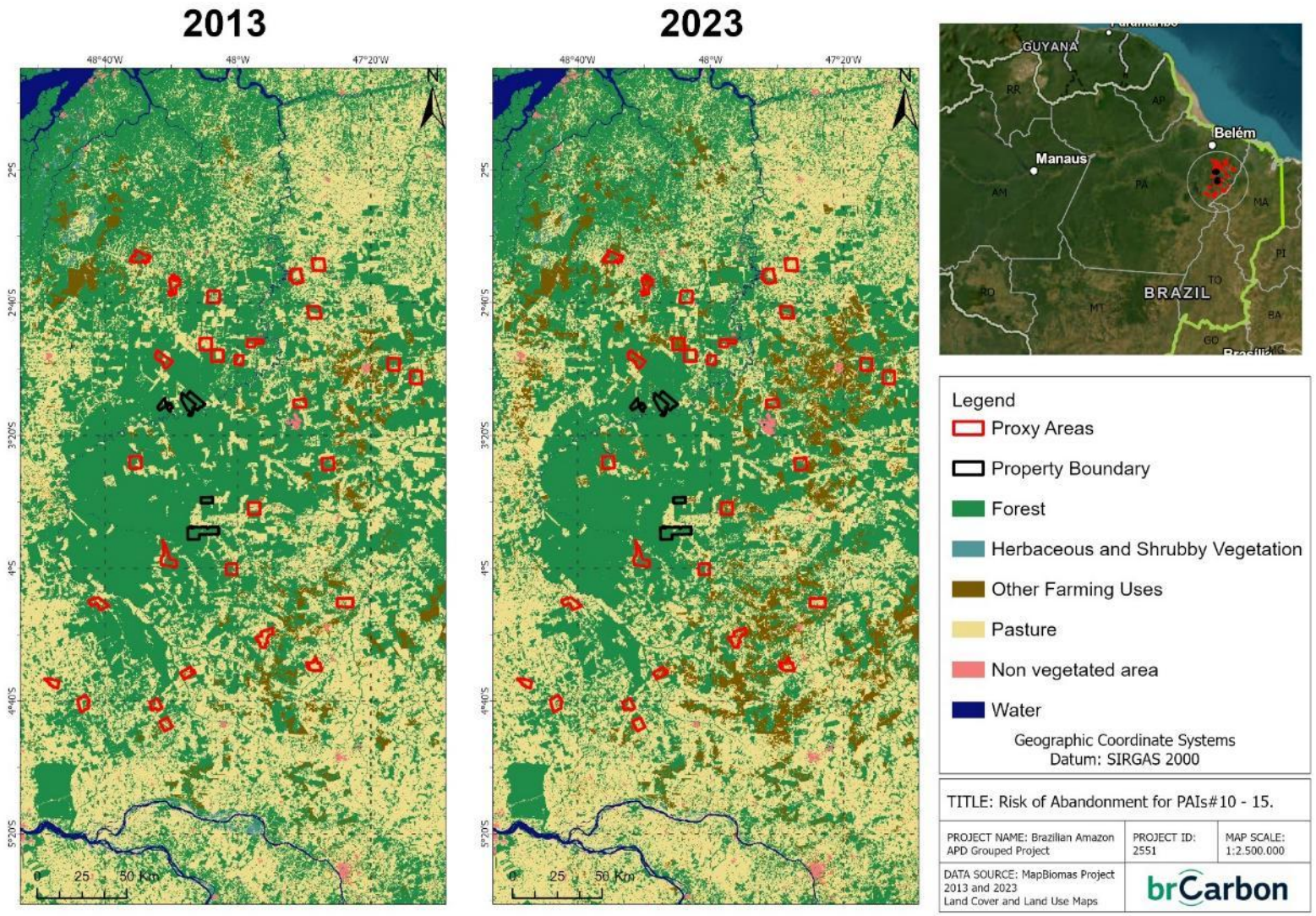


Figure 51. Mapbiomas land use transitions in proxy areas and project property boundaries for the PAI #10 to PAI #15 region in in Dom Eliseu, Ipixuna do Pará, Paragominas, Rondon do Pará and Tomé-Açú in the Pará State.

3.3 Optional Criterion: Climate Change Adaptation Benefits

Not applicable.

3.3.1 Activities and/or processes implemented for Adaptation (CCB, GL1.3)

Not applicable.

4 COMMUNITY

4.1 Net Positive Community Impacts

4.1.1 Community Impacts (CCB, CM2.1)

The net positive impacts on the communities influenced by PAI #1 are outlined the tables 63, 64 and 65 below.

PAI#1 -

Table 66. São Lourenço and Serra Azul Communities Impacts

Community Group	**São Lourenço ande Serra Azul Communities (Extractivism Reserve – Resex Guariba-Roosevelt)**
Impact	Empowerment, autonomy, and inclusion of young people on social organization
Type of Benefit/Cost/Risk	**Direct actual benefit**: Internship program for young people from the territory. **Indirect actual benefit**: Empowerment and maintaining the future of the community. **Direct predicted benefit**: Workshops with young people from the territory on cultural and historical recovery, socio-environmental law, and construction of a development plan for youth. **Indirect predicted benefit:** Engagement of young people in community activities and maintenance of the livelihoods for future generations.
Change in Well-being	Empowerment of the 20 young leaders in the territory.

Table 67. Resex Guariba-Roosevelt Community Impacts

Community Group	**Extractivism Reserve – Resex Guariba-Roosevelt**
Impact	Promotion of youth training
Type of Benefit/Cost/Risk	**Direct actual benefit**: Staff qualification for office work at the association **Indirect actual benefit**: Empowerment and strengthen of the local social organization. **Direct predicted benefit**: Training in office issues to qualify the association team. **Indirect predicted benefit:** Engagement of young people in the community activities
Change in Well-being	Formation of new and young staff to empower the association.

Table 68. São Lourenço and Serra Azul Communities Impacts

Community Group	**São Lourenço ande Serra Azul Communities (Extractivism Reserve – Resex Guariba-Roosevelt)**
Impact	Improvement of local organization management
Type of Benefit/Cost/Risk	**Direct actual benefit**: Activities that promoted the recovery of the community's history and discussions about their demands. Support for local association management. **Indirect actual benefit**: Identification and strengthening of the cultural, historical, and social value of the territory. Community empowerment and autonomy. **Direct predicted benefit**: Situational diagnosis of local associations and preparation of strategic planning. **Indirect predicted benefit:** Engagement and strengthening of local associations.
Change in Well-being	Impact on the livelihoods of the 20 families in the communities through the strengthening of the representative association.

The net positive impacts on the communities influenced by PAIs #2 to #5 are outlined the tables 66, 67, 68 and 69 below.

Table 69. Porongaba Communities Impacts

Community Group	**Communities of Porongaba**
Impact	Strengthening local culture
Type of Benefit/Cost/Risk	**Direct actual benefit:** Development of activities that strengthen local culture, such as sporting and religious celebration and the renovation of the community chapel. **Indirect actual benefit:** Promoting community engagement in project activities and well-being
Change in Well-being	Engagement of 150 people through activities that protect cultural and spiritual values and improve their well-being

Table 70. Porongaba Communities Impacts

Community Group	**Communities of Porongaba**
Impact	Land donation and land rights
Type of Benefit/Cost/Risk	**Direct actual benefit**: Creates a better legal situation for the bona fides occupants and their families – 2,750ha donated benefiting 43 families. **Indirect actual benefit:** Make it possible to these families access new forms of public policies, as low-cost finances.
Change in Well-being	Development of properly legal situation to the families gives them security to produce their own existence.

Table 71. Porongaba and Palmares Communities Impacts

Community Group	**Communities of Porongaba and Palmares**
Impact	Access to energy and water

Type of Benefit/Cost/Risk	**Direct actual benefit**: Donation of solar kits, water pumps and other related materials to improve quality of life. Benefiting 43 families (42 Porongaba, 01 Palmares). **Indirect actual benefit:** It avoid risks to go to the riverbanks to take water, guarantee the possible of store food refrigerated, and other benefits, as be able to have access to the internet and other communication means.
Change in Well-being	These goods allow families to have direct access to water and energy, what improves their condition of life in many ways, as having access to a better communication system, condition of refrigerate food and others benefits.

Table 72. Porongaba and Palmares Communities Impacts

Community Group	**Communities of Porongaba and Palmares**
Impact	Empowerment, autonomy, and inclusion of women
Type of Benefit/Cost/Risk	**Direct actual benefit**: Activities that promoted engagement and inclusion of women in the project. Donation of women's football uniforms and ball. **Indirect actual benefit**: Women feeling part of the project activities, recognizing their voice and opinion. **Direct predicted benefit**: Courses and training for women to generate income. **Indirect predicted benefit:** Empowerment and autonomy of women
Change in Well-being	Inclusion of 26 women in project activities, promoting spaces for speaking and listening. Support for the sport and well-being of 20 women through the donation of football uniforms.

The net positive impacts on the communities influenced by PAI #6 are outlined the table 71 below.

Table 73. Curara Community Impacts

Community Group	**Curara Community**

Impact	Structuring the manioc flour value chain and community social organization
Type of Benefit/Cost/Risk	**Direct actual benefit**: Activities that promoted the recovery of the community's history, discussions about their demands. Exchange of knowledge with other communities about manioca flour production and social organization. **Indirect actual benefit**: Generation of learning, knowledge, and inspiration for the community. **Direct predicted benefit**: Workshops on social organization as (associativism and cooperativism). Logistical support for manioca flour production. **Indirect predicted benefit**: Strengthening the activities that promote income generation.
Change in Well-being	Impact on the livelihoods of the 30 families in the community through the development of the manioca flour value chain.

The net positive impacts on the communities influenced by PAIs #7 to #15 are outlined the tables 73 to 76 below.

Table 74. Barreirinha Indigenous Land Community Impacts

Community Group	**Barreirinha Indigenous Land**
Impact	Strengthening and valorization of the identity and culture of the Amanayé people. (APPENDIX_INDIGENOUS-PEOPLE-DAY)
Type of Benefit/Cost/Risk	**Direct actual benefit**: Celebration and recording of Indigenous Peoples Day in the community. **Indirect actual benefit:** Strengthening the culture and identity of the Amanayé people within the community, enabling new generations to learn and perpetuate their traditions; Generation of knowledge (and consequent appreciation) about Amanayé culture beyond the community through the dissemination of the video that recorded the celebration.
Change in Well-being	Strengthening community ties. Participation of approximately 60 people.

Table 75. Irmã Dorothy Settlement Community Impacts

Community Group	**Irmã Dorothy Settlement**
Impact(s)	Improvement of access to education for children and adolescents in the Irmã Dorothy community.
Type of Benefit/Cost/Risk	**Direct actual benefit**: Construction of the Dorothy Stang Municipal Elementary School.
Change in Well-being	Improved conditions for educational development and expanded access to education for, at least, 42 settled students in the first year.



Figure 52. Construction of Dorothy Stang Municipal Elementary School. (APPENDIX_EVIDENCE > Pará > PA Irmã Dorothy and PA Bom Jesus > Fotos equipamentos escola Dorothy).

Table 76. Irmã Dorothy Settlement Community Impacts

Community Group	**Irmã Dorothy Settlement**
Impact(s)	Improvement of water access for students of Dorothy Stang Municipal Elementary School and their families.
Type of Benefit/Cost/Risk	**Direct actual benefit**: Construction of an artesian well in the community and installation of water pumps, water tanks, and hydraulic systems to supply the Dorothy Stang Municipal Elementary School. **Indirect predicted benefit:** Improvement of education and health conditions for the community
Change in Well-being	Improvement in access to water, education, and health for at least 42 families in the first year.

Table 77. Bom Jesus Settlement Community Impacts

Community Group	**Bom Jesus Settlement**
Impact(s)	Improvement of water access for students of Dorothy Stang Municipal Elementary School and their families.
Type of Benefit/Cost/Risk	**Direct actual benefit**: Construction of an artesian well in the community and installation of water pumps, water tanks, and hydraulic systems to supply the Dorothy Stang Municipal Elementary School. **Indirect predicted benefit:** Improvement of education and health conditions for the community
Change in Well-being	Improvement in access to water, education, and health for at least 32 families in the first year.

4.1.2 Negative Community Impact Mitigation (VCS, 3.19; CCB, CM2.2)

The precautionary principle serves not only to avoid a risk, but more importantly to legitimize and acknowledge the risks, which can be useful to clarify some issues in case decisions turn out to be wrong in the future.

BRC is aware that, as in any project that works with people, the implementation of activities can change the internal relationships between community members. Therefore, some measures to mitigate negative impacts have been taken and are detailed below.

Donating land is one of the most complex activities of the project and therefore generates some negative impacts. The objective of the action was to guarantee the right to land to the communities in Porongaba's area. But land issues are a delicate challenge for the project. The land donation process is long and bureaucratic, which is why some people are frustrated with this situation. Furthermore, there are still problems with deforestation and invasion in the areas. At the moment the mitigation measures taken to solve this problem is related to improve communication with the communitarians, which is a challenge, once inside the territory there is people fighting against the project, because of the intention to avoid deforestation, as the project has been successful in the region of Porongaba, where the project activities have shrunk the deforestation in the area. Beyond that, the PP is focused on solving all the bureaucratic problems as soon as possible to avoid frustration by the beneficiaries.

Another negative impact mapped by the PP is the use of internet around school's area at Porongaba, which was already mentioned in the second monitoring report, to solve that was combined with the schools representants and the part of the community that a community center would be constructed in a more appropriated place to avoid conflicts on internet use, however, because of logistics problems it was not possible to do it in this monitoring period. But the project will develop this action when it became possible, for now the PP is analyzing alongside the local population where the best place to build it is.

One point more that we have mentioned as a problem to be solved was a better and more effectivity relation and partnership between the BRC and the city hall to develop health actions together, unhappily through the conversations among the parts, was found some bureaucratic obstacles to make this partnership in an appropriate way. By now our team are deepening the understanding of possibilities to make an official agreement and implement the heath activities in the territory.

Conducting activities exclusively with women may create a certain discomfort for some men, as they may perceive it as a loss of their privileged space. Furthermore, they may feel scared by women's empowerment. Therefore, all specific activities involving women will be well communicated e contextualized, preventing misunderstanding and unresolved doubts. Furthermore, activities addressing discussions on gender issues will be conducted in public meetings and workshops with men and women.

Meanwhile at Curara Community the PP has not mapped negative impact so far, once the activities are being defined yet, following the interests and demands from the local population. In this sense, the PP is aware that after deepening the implementation and the diagnose of the beneficiaries' interests will be clarified the possible negative impacts.

At Bom Jesus Settlement Project the challenge is related to the refurbishment of the school, which is already negotiated with the Rondon do Pará city hall, and because of bureaucratic issues and logistics problems needed to be postponed. To mitigate the frustration and show that the project is been developed properly, the construction of the artesian well to be attached to the school is already under development, despite the access to this service will be liberated just after the refurbishment itself.

4.1.3 Net Positive Community Well-Being (VCS 3.19; CCB, CM2.3, GL1.4)

The net well-being impacts of the project are positive compared with their well-being conditions under the without project scenario. Among them, access to electrical energy, access to water, and suitable conditions for food storage are prioritized through the installation of photovoltaic systems, donation of water pumps, and freezers for 23 families in Porongaba and Palmares, and land donation to bona fide squatters.

The Porongaba community requested the renovation of "Nossa Senhora das Candeias" Chapel, so that they could have a good space to practice their spirituality and faith, improving the well-being of families living there. The chapel innovation involved expanding the existing structure to accommodate more people and refurbishing its painting. Before the renovation, the chapel measured 24 m², now measuring 48 m². BRC also donated two religious images and built two bathrooms (Male and Female).



Figure 53. “Nossa Senhora das Candeias” Chapel renovation

To inaugurate the chapel, a celebratory event was held, and the entire community participated. During this occasion, the chapel was also decorated in collaboration with the community, incorporating elements and materials as requested by them.



Figure 54. “Nossa Senhora das Candeias” Chapel decoration

On the same day as the chapel's inauguration celebration, the Children's Day festivities and two football tournaments (one for women and one for men) were also conducted. The events concluded with a collective lunch for all participants, estimated to be at least 300 individuals. During the celebration, 110 toy packages were donated to children, with an additional 40 distributed in the following days. For the football tournaments, medals and trophies were donated for the first and second-place players.

Additionally, the women's football team "Estrelas da Porongaba" had requested uniforms and balls to strengthen and empower women in the community's football, which were also distribute on this occasion. All these celebratory activities aimed at cultural, spiritual, and sports empowerment were highly significant and important for the community.

Another conducted activity aimed at contributing to the well-being of women in the community was the initiation of the formation of women's groups. Three workshops were conducted, one with the women from Palmares community and the other two with the women from the Porongaba community (center and riverbanks). The workshops sought to create safe spaces for dialogue and listening for the involved women, promote moments of self-awareness, empowerment, and appreciation for their journeys and dreams, and encourage their participation in the project. A total of 26 women of various ages and characteristics participated. These were crucial moments for these women, and below are some testimonials provided at the end of the workshops.

"I stopped to think about things I've never thought before. I had never thought about my mom and my grandma in this way. It was important to discover things about myself too."

Edeane, Seringal Palmares

"It was fun to express what you feel. Many times, we get sad without being able to talk about it."

Fabrícia, Seringal Palmares

"It's very important to do this. We work too much and forget about ourselves."

Dilcilene, Seringal Palmares

The families of the Porongaba community face significant challenges in accessing the cities of Rio Branco and Sena Madureira, where they can access basic health services and address other matters that are only possible in urban centers. With the aim of facilitating this access and seeking to provide security and quality of life for these families, the project contributed to the maintenance of rural roads on the property during the months of July and August. These rural roads enable families to have land access to schools and churches in the region, which is essential, especially during dry seasons.



Figure 55. Maintenance of lanes in Porongaba

The first lane to undergo maintenance was the one from Porongaba headquarters, connecting the Nova Olinda Lane to the Iaco River, with a length of 18 km. Subsequently, maintenance activities were initiated on 15 km of the Baixa Alegre and Santa Luzia lanes. In addition to generating benefits for the community, this maintenance also contributes to the optimization of project activities, ensuring greater security and reduced travel time.

Another activity which is been developed, to generate improvement in communities' wellbeing is the process of land donation to the bona fide squatter's families, which showed interest in receiving the

papers of the area where they live for a long time. This is a complex process which demands some steps to be taken, as georeferencing the area, do the notary work, pay taxes, emit property certifications and, finally, the receiving and recognition of property rights papers. It has started in middle 2022 with public meetings to check which families were interested in participating, while during 2023, most of the steps were taken, missing by now just the last one, the land rights transference itself, however it is a bureaucratic process which depends on public power time.BRC also conducted a knowledge exchange about social organization and manioca flour production in the Curara Community (Manicoré - AM), with the participation of two individuals from the São Lourenço Community of the Guariba-Roosevelt Extractive Reserve (Aripuanã - MT). One of the objectives of the activity was to foster spaces for the exchange of experiences and mutual learning between the territories, contributing to the appreciation of the traditional culture of both participating communities.

At Guariba Rosevelt Extractive Reserve, following the local association's demand, the project has hired a local company (Jurupará Socioambiental) to support and develop some activities in the ground, as the promotion of youth development to fortify the territory through trainings, and the formation of young people to work for the association, focusing in empower the social organization, through office training. Now there are 20 youth people involved on the workshops for youth development and one young lady which is hired as trainee to advice the local association, chosen by themselves. Further than that, these activities are related, together with the scope of the contract between the PP and the Jurupará Socioambiental company, to the empowerment of social organizations, in the case AMORAR (Associação dos Moradores da Reserva Extrativista Guariba Roosevelt), helping them to empower its practices.

The indigenous people day were celebrated in Barreirinha Indigenous Land through the valorization of the culture and history of them. For it, the PP has supported the celebration itself and the production of a short video valorizing the Amanayé culture. We believe that it helps the self-esteem of the people and as said by their chief, this kind of action helps them to maintain the youth people aware about their origin and culture. Around 60 people participated in the activities.

The education issue is one of the most important goals of the project, in this sense, the construction of a school at Irmã Dorothy Settlement is activity which is been developed and that will be donated to the Rondon do Pará municipality, to improve the quality and the access to this service. But not just the building that has been donated, there is the furniture and the construction of an artesian well in the school to guarantee access to water, and indirectly the whole process of education. In total, initially, around 40 families will benefit from these project activities.

At the Bom Jesus Settlement Project the refurbish of the school is already agreed with the local population and the public power, but, by the moment, the PP has just built the artesian well which is going to foster the water supply to the school, in the beginning it will achieve around 32 students and the scholar community.

The installation of artesian well in these two schools will be a tool to improve the accessibility to water, and in this case the focus will be on helping the students on their condition of study.

All these activities developed by the project has produced innumerous employes and job opportunities, which has helped some people to improve their income, as the necessity to hire of carpenters, boatmen, cooks, and others is a constant on the development of the project.

About the standardized metrics in this monitoring period there were some activities which were not implemented by innumerous reasons, as fostering livelihoods, that will be implemented some actions in the next project phase. Other activity which not happened were related to health demands, because of some challenges faced by the PP, mainly related to institutional defies as the construction of an official agreement.

4.1.4 Protection of High Conservation Values (CCB, CM2.4)

All activities undertaken are centered around forest conservation and the recognition of local culture, including the protection of HCVs. Thus, in addition to not negatively impacting them, the project also provides activities that bring benefits to these areas. An example is the chapel renovation in Porongaba community, which was previously recognized as an HCV by the community.

At Barreirinha Indigenous Land the Capim River was mapped as an HCV, even no activity was developed directly to valorize the place, the whole focus of the project, environmental conservation, indirectly helps to protect the Capim River. More than that, the celebration of Indigenous People Day is indirectly a way to protect the HCV's (in this case, Capim River) through the recognition of the cultural issues valued by the Amanayé people, as the environmental worries.

HCV's are a hard concept to understand by the population, even to the PP, however it is necessary to work with it, not just to preserve them, but to show the socio and cultural responsibility of the project. In this sense, the PP has the duty to map all of the HCV's in a properly way, so in the next cycle we intend to develop and use better strategies and methodologies for the identification and validation of all of them in each community we work, to valorise and mitigate negative impacts on it, avoiding risks to it and to the project itself.

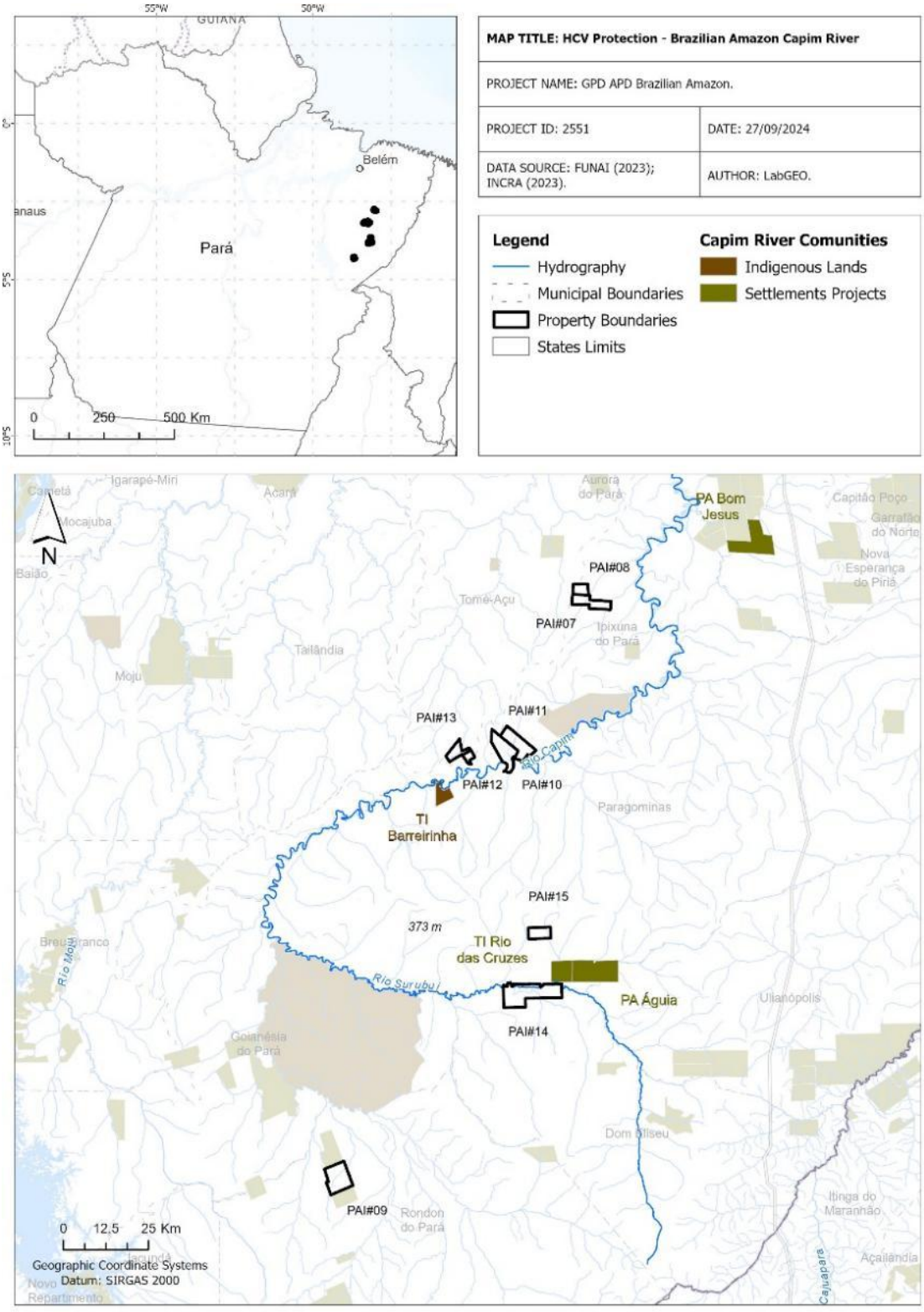


Figure 56. Community High Conservation Value Identified

4.2 Other Stakeholder Impacts

4.2.1 Mitigation of Negative Impacts on Other Stakeholders (VCS, 3.18, 3.19; CCB, CM3.2)

In a general manner, there is no negative impact mapped to the stakeholders, excepting the ones related to frustrated expectations create by them.

Other point to highlight is the potential impact made to the land grabbers, who are inside Porongaba, expelling them from the area through increase the governance level over the necessary dialog made by the landowner with the government agencies, which are the responsible for monitor environmental and for land crimes. However, it is necessary to relate that the PP do not recognize them as legitim stakeholders, once they are against the law, thus in our point of view, the project has no negative impacts mapped.

4.2.2 Net Impacts on Other Stakeholders (VCS, 3.18, 3.19; CCB, CM3.3)

The main net impacts on other stakeholders are related to the relationship with public and local institutions to carry out project activities.

In the municipality of Aripuanã, state of Mato Grosso, a meeting with Municipal Secretariat of Rural Development revealed that is crucial for them to strengthen community organizations. This helps in managing the resources and materials they provide to the communities. Therefore, the project has been in development since October 2023 in collaboration with a local company, Jurupará Socioambiental, will not only contribute to community impacts, but also assist the activities of municipal secretariats. So, in this case, the project activity is going to be a reinforcement to the need of a better interlocution between the local population and the public power, what mean a positive impact in this relation.

Additionally, a meeting with the Coordination of Conservation Units (CUCO) of the State Secretariat of Mato Grosso revealed threats to the regularization of the Guariba-Roosevelt Extractive Reserve (Resex) and the community's presence in the territory. In this sense, strengthening the association and its youth members helps reinforce the struggle for the territory and the guarantee of their livelihoods.

Similarly, noteworthy is the relationship being built with the National Foundation of Indigenous Peoples – FUNAI. There is an intention to advance a partnership so that the project can contribute to the qualification process in the indigenous area where the Curara community is located. This

involves providing logistical support for necessary activities. Thus, the project activity is going to be a tool to improve the relation between the Indigenous institute and the Curara Community.

At Rondon do Pará, the construction and refurbishment of schools made by the PP due an agreement with the town hall is impacting positively the relation and the actions of them in the territory of Bom Jesus and Irmã Dorothy Settlements Projects. This activity is deepening the public power presence on the territory, what is a good impact to all stakeholders involved.

4.3 Community Impact Monitoring

4.3.1 Community Monitoring Plan (CCB, CM4.1, CM4.2, GL1.4, GL2.2, GL2.3, GL2.5)

The community monitoring plan presents the activities described in the project design and others that emerged throughout the development of the project, the benefited communities and other stakeholders involved, the sampling methods used, dates, frequency (when it is possible) of each one of them.

Even the requirements been of the certification standard is to make the social monitoring once each five years, the BRC has defined as strategy to report it annually, what means that some numbers will vary slowly year by year, mainly because some characteristics of the social dimension takes time to been effective and visible in its results.

In that way, monitoring is a continuous process of planning, recording, and evaluation. The theory of change involves different implementation stages of the project activities, and relates to many thematic, in what makes it complex, once it is needed a lot of tools to analyze and act upon the project proposes, so using the data of the monitoring period the PP can adapt all the corrective actions necessaries to make the project real effective.

It is important to emphasize the difference between efficiency, efficacy and effectiveness. So, in this sense, efficiency is the ability to achieve the goals previously accorded in the right time, with the proper quality and the lowest cost, and efficacy is to use all the tools necessary and accessible to generate the best results, while effectiveness is what is really intended, which is a real improvement on communities' quality of life and on environment. As the project seeks through its actions to promote positive net impact on communities, therefore effectiveness, large monitoring periods are needed to evaluate if each of the actions summed with others, will achieve at the end, what the project desires and needs to reach its goals.

To guarantee the proper comprehension of the data to monitor the project activities, BRC has developed a platform (app) to collect and analyse this information in a way that will be possible to record and manage all the needs to the development of the project. This system will help the PP to check what is effective and what is not, and from it adapt and improve the activities. But, not just that, this strategy is going to be useful to avoid loss of data from applied questionaries and interviews, fostering in a digital way all the information demanded to be reported.

All these points clarified, the table below outlines the community monitoring plan for this cycle, considering all activities that have been developed since the beginning of the project and some that are still in the planning phase. The table is divided into three programs: (i) institutional relations; (ii) diagnosis and monitoring; and (iii) social impact.

The institutional relations program is associated with engaging other stakeholders, such as meetings and partnerships (formalized or not) with public institutions, companies, and NGOs. The diagnosis and monitoring program refers to the collection and analysis of data, through applied questionnaires, the BRC platform, or participatory workshops.

The social impact program pertains to actions directly related to the project's social impact across five main thematic areas: education, health, livelihoods, well-being, and land rights. It is essential to emphasize that the impact occurs in the long term, is a continuous process of assessment and improvement, and that the other programs directly contribute to generating and effectively monitoring the impact.

Table 78. Communities Diagnosis and Monitoring.

Activity Description	Project objectives	Community Variables	Results achieved in the 3rd Monitoring Period	Results achieved since project start (including 3rd Monitoring Period)	Types of measurements/sampling methods/frequency of monitoring reporting
Installing repeating towers + additional equipment to provide internet	Digital inclusion / Well-being.	Number of towers (60m high) installed.	None	6 towers (60m high) installed.	The number of operational towers, solar panels, battery banks and the amount of optical fiber installed are counted with the service provider during the project monitoring.
		Number of towers (72m/82m high) installed.	None	2 towers (78m high) installed.	
		Number of solar panels deployed.	None	91 solar panels deployed	
		Number of Battery banks deployed.	None	91 battery banks deployed	
		Total amount of optic fiber installed.	None	70Km of optical fiber installed.	
Fostering good fire management and firefighting practices to communities to prevent the spread of wildfires in the project area.	Wildfire reduction/ Training.	Number of training courses executed.	None	None	The number of training and equipment records delivered are summarized at each monitoring event.
		Number of firefighting equipment sets delivered.	None	None	

Activity Description	Project objectives	Community Variables	Results achieved in the 3rd Monitoring Period	Results achieved since project start (including 3rd Monitoring Period)	Types of measurements/sampling methods/frequency of monitoring reporting
Sustainable Forest Management	Improved Land Management / Training.	Number of trainings in forest management, reduced impact logging and work safety, with a focus on FSC certification, carried out.	None	**PAI#01:** 01 training **PAI#02-05:** 01 training	The number of training and equipment records delivered are summarized at each monitoring event.
		Number of safeties equipment sets delivered.	None	**PAI#01:** 01 set of safety equipment's delivered.	
Biomass inventory	Training / Well-being.	Number of trainings related with forest inventory.	None	**Porongaba:** 01 training, 08 people.	The number of training records are summarized at each monitoring event.
Capacity building / training related to Technical Assistance and Rural Extension (ATER): ecological pasture / voisin method; good practices for extracting chestnuts, good agricultural practices (subsistence	Training / Well-being.	Number of capacitation related to ATER.	None	**Porongaba:** 2 trainings, 19 people. **Bom Jesus:** 1 training **Irmã Dorothy:** 1 training **Águia:** 1 training	The number of training records are summarized at each monitoring event.

Activity Description	Project objectives	Community Variables	Results achieved in the 3rd Monitoring Period	Results achieved since project start (including 3rd Monitoring Period)	Types of measurements/sampling methods/frequency of monitoring reporting
agriculture), among others.					
Capacity building / training focused on encouraging collective work in the community, promoting the project to local associations.	Training / Well-being.	Number of trainings related in the collaborative economy.	**Guariba-Roosevelt and Curara:** 1 training, 27 people	**Guariba-Roosevelt and Curara:** 1 training, 27 people	The number of training and equipment records delivered are summarized at each monitoring event.
Installation/renovation of an outpost to support traveling health campaigns promoted by the city hall in Sena Madureira.	Health/ Training	Number of Outpost installed / renovated.	None	None	The number of outposts installed / renovated, and the total amount of money invested in this project activity are counted at each monitoring event.
Articulation with the State Public Power to support the Itinerant Health Program for the region of the middle Iaco.	Health / Training	Number of health-related events / meetings / lectures in community	None	**Porongaba:** 2 events (1,665 treatments)	The number of events records are summarized at each monitoring event.
		Number of MOU or cooperation agreement signed.	None	None	The number of MOUs are summarized at each monitoring event.

Activity Description	Project objectives	Community Variables	Results achieved in the 3rd Monitoring Period	Results achieved since project start (including 3rd Monitoring Period)	Types of measurements/sampling methods/frequency of monitoring reporting
Capacity building / training focused on workers safety in tree feeling.	Health / Training	Number of trainings executed.	None	None	The number of training records are summarized at each monitoring event.
Creation and implementation of a rescue plan.	Health / Training	Number of plans created and executed.	None	None	The number of plans is summarized at each monitoring event.
Promotion of environmental sanitation through the implantation of ecological toilets / pits (eg: EMBRAPA, pit, pit with banana and tire, biodigester pit, dry toilet, etc.).	Health / Water / Well-being	Number of courses to promote environmental sanitation.	None	None	The number of courses records are summarized at each monitoring event.
		Number of new bathrooms.	None	**Porongaba:** 07	The number of bathrooms is counted at each monitoring event.
Promotion of improvements in water quality and access to water.	Health / Water / Well-being	Number of waters potability analysis.	**Vila Brasil:** 02	**Porongaba:** 09 **Vila Brasil:** 02	The number of water potability analysis made are counted at each monitoring event.
		Number of water filter distribution.	None	**Porongaba:** 10	The number of water filters distributed are counted at each monitoring event.

Activity Description	Project objectives	Community Variables	Results achieved in the 3rd Monitoring Period	Results achieved since project start (including 3rd Monitoring Period)	Types of measurements/sampling methods/frequency of monitoring reporting
		Number of chlorine distribution.	None	None	The number of chlorine distribution events are counted at each monitoring event.
		Number of water pumps installed.	None	**Porongaba:** 41	The number of water pumps are counted at each monitoring event.
Renovation / equipment of schools	Education / Well-being.	Number of schools renovated.	**Irmã Dorothy**: 01 school construction start	**Porongaba**: 02 **Irmã Dorothy**: 01 school construction start	The number of schools renovated are counted at each monitoring event.
		Number of schools equipped with TV, printer, and computer for better resources and distance learning.	None	**Porongaba**: 02	The number of schools equipped are counted at each monitoring event.
		Number of schools equipped with library.	None	None	
Articulation with the State / Federal Public Power and private	Education / Well-being.	Number of payments for transportation of school supplies.	None	**Porongaba:** 01	The number of payments and the total amount of money invested in this

Activity Description	Project objectives	Community Variables	Results achieved in the 3rd Monitoring Period	Results achieved since project start (including 3rd Monitoring Period)	Types of measurements/sampling methods/frequency of monitoring reporting
initiative to support education in the project area.		Number of payments for students' transportation.	None	None	activity will be summarized at each monitoring event.
		Number of articulations of local production of food for school meals.	None	None	The number of succeed articulations will be summarized at each monitoring event.
		Number of facilitations of the association / cooperative's access to the national school feeding program (PNAE).	None	None	The number of facilitations will be summarized at each monitoring event.
		Number of articulations with funds and NGOs linked with educational cause for promoting distance learning.	None	None	The number of succeed articulations will be summarized at each monitoring event.
Lectures	Education / Well-being.	Number of lectures on the environment, forests, environmental services, biodiversity, environmental	**Curara:** 01 workshop on biodiversity **Águia:** 01 workshop on forest mensuration	**Curara:** 01 workshop on biodiversity **Águia:** 01 workshop on forest mensuration	The number of lectures will be summarized at each monitoring event.

Activity Description	Project objectives	Community Variables	Results achieved in the 3rd Monitoring Period	Results achieved since project start (including 3rd Monitoring Period)	Types of measurements/sampling methods/frequency of monitoring reporting
		conservation, sustainable forest management, climate change, carbon cycle, environmental legislation, labour legislation, associations, among others.			
Fostering and support for solid waste management and recycling.	Health / Education / Well-being.	Number of lectures to promote solid waste separation and recycling (reduction, reuse, recycle).	None	None	The number of facilitations is summarized at each monitoring event.
		Number of Construction of a suitable site for depositing and storing recyclable waste.	None	None	The number of constructions is summarized at each monitoring event.
		Number of removals of recyclable waste.	None	None	The number of removals is summarized at each monitoring event.

Activity Description	Project objectives	Community Variables	Results achieved in the 3rd Monitoring Period	Results achieved since project start (including 3rd Monitoring Period)	Types of measurements/sampling methods/frequency of monitoring reporting
Hiring of community personnel.	Employment / Livelihood.	Number of people employed.	2	31	The number of people employed is counted and summarized at each monitoring event.

4.3.2 Monitoring Plan Dissemination (CCB, CM4.3)

As per practice, required by the Verra's rules, the monitoring plan and monitoring results will be available on Verra's website through the GPD and monitoring reports full documents. Beyond that, the project activities will be presented to the local stakeholders through meetings and informs, what is previewed to happen during the third and fourth social engagement stages.

Furthermore, BRC has planned to create a semiannual newsletter for each region and a general annual report covering all instances. This newsletter will be disseminated in print to the communities and other stakeholders that BRC visit, as well as digitally via email and WhatsApp. It will include a summary of the main project activities in each community and municipality, allowing everyone to stay informed and reach out for any questions and/or suggestions.

4.4 Optional Criterion: Exceptional Community Benefits

Not Applicable.

4.4.1 Short-term and Long-term Community Benefits (CCB, GL2.2)

Not Applicable.

4.4.2 Marginalized and/or Vulnerable Community Groups (CCB, GL2.4)

Not Applicable.

4.4.3 Net Impacts on Women (CCB, GL2.5)

Not Applicable.

4.4.4 Benefit Sharing Mechanisms (CCB, GL2.6)

Not Applicable.

4.4.5 Governance and Implementation Structures (CCB, GL2.8)

Not Applicable.

4.4.6 Smallholders/Community Members Capacity Development (CCB, GL2.9)

Not Applicable.

5 BIODIVERSITY

5.1 Net Positive Biodiversity Impacts

5.1.1 Biodiversity Changes (VCS, 3.19; CCB, B2.1)

Table 79. Biodiversity Changes

Change in Biodiversity	Community of amphibians, reptiles, mammals, and birds
Monitored Change	Positive and direct impacts: - Conservation of habitats - Maintenance of species richness - Protection of endemic and endangered species By preventing deforestation, the project activities directly contributed to the preservation of habitats for hundreds of species. This impact is evidenced by survey results, which recorded the presence of 859 species within the project area, including 30 species classified as threatened with extinction.
Justification of Change	The justification of change is based on the assumption that the avoidance of deforestation lead to the preservation of biodiversity by maintaining continuous, unfragmented habitats for species. The rationale for focusing on avoiding deforestation as a key project action is rooted in the significant role that intact forests play in providing habitat and maintaining ecosystem processes that support species survival and reproduction. The sampling followed the methodology outlined in the Biodiversity Monitoring Plan (Section 5.3.1), focusing on four groups: mammals, birds, reptiles, and amphibians. Two primary methods were used: active search and camera traps. The active search involved specialists surveying animals and their signs (e.g., footprints, vocalizations) along trails, and adjacent environments. Camera traps were placed on fauna trails, attached to trees 45 cm above the ground with baits to attract animals

5.1.2 Mitigation Actions (VCS, 3.19; CCB, B2.3)

Implementation of project activities had no negative impact on biodiversity. The HCVs attributes of the project were maintained through the conservation of forest cover, reduction of fragmentation and maintenance of habitats availability.

5.1.3 Net Positive Biodiversity Impacts (CCB, B2.2, GL1.4)

Without the project, the scenario would be characterized by the suppression of forest for the implementation of cattle raising or agriculture. The forest suppression represents habitat loss for hundreds of species that depends on forest environments for survival, foraging, and reproduction. With the project, the forest is conserved, safeguarding biodiversity. Since the project activities have caused no negative impacts on biodiversity, the net positive impact is positive.

Table 80. Demonstration that the project will not adversely impact habitats for rare, threatened, or endangered species.

Threatened species	The monitoring campaigns revealed the presence of five globally threatened species classified as EN and CR by the IUCN Red List (*Ateles chamek*, *Inia geoffrensis*, *Pteronura brasiliensis*, *Psophia obscura* and *Cebus kaapori*) within the project area. All project activities are designed to promote forest conservation; therefore, no species will be adversely impacted.

5.1.4 High Conservation Values Protected (CCB, B2.4)

The HCVs related to biodiversity in the project zone are HCV1 (Globally, regionally or nationally significant concentrations of biodiversity values) and HCV2 (Globally, regionally or nationally significant large landscape level forests).The location of the HCVs are the project areas itself, and were defined as follows:

- HCV1 was defined by the presence of endangered species within the project areas. During the fauna survey campaigns, at least one species classified as Vulnerable, Endangered, or Critically Endangered (IUCN Red List) was recorded in each PAI (Figure 57).
- HCV2 was defined by proving that the project areas are located in regions considered important for biodiversity conservation, according to the Key Biodiversity Areas (KBA -

https://www.keybiodiversityareas.org/) and the Conservation Priority Areas of the Federal Environmental Ministry (MMA, 2023) (Figure 57).

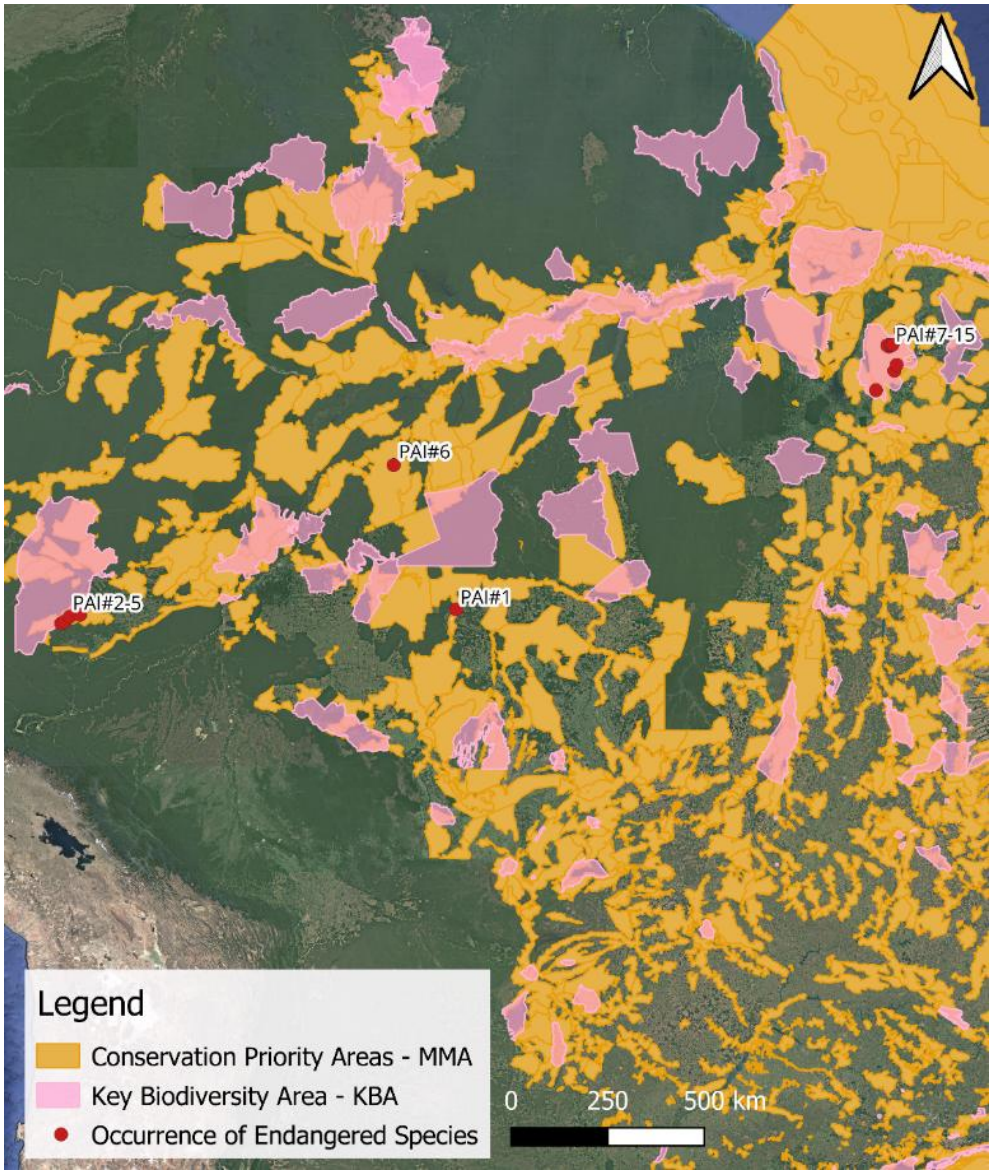


Figure 57. Red points indicate the locations where endangered species (classified as Vulnerable, Endangered, or Critically Endangered according to the IUCN Red List) were recorded during the fauna survey campaigns, providing evidence for HCV1. The yellow and pink areas highlight regions of high conservation importance, as identified by the Federal Ministry of Environment (MMA, 2021) and the Key Biodiversity Areas (KBA), supporting the designation of HCV2.

All project activities were designed to promote forest conservation and avoid the deforestation within the project areas; therefore, no HCVs were negatively impacted.

5.1.5 Species Used (VCS, 3.19; CCB, B2.5, 2.6)

No species (plants or animals) have been introduced as an effect of project activities, nor have populations of invasive species increased because of project activities during the monitoring period. The main economic activity of the region is livestock, and for this reason a "non-native" grass species (*Brachiaria* sp.) was introduced by local families during the pasture formation. Although *Brachiaria* can be considered an aggressive species, it cannot establish in shaded environments such as tropical forests and is therefore not considered invasive in the project areas.

5.1.6 Invasive Species (VCS, 3.19; CCB, B2.5)

Table 81. Invasive Species.

Existing invasive species	Mitigation measures to prevent spread or continued existence of invasive species
Brachiaria sp.	All project activities are designed to promote forest conservation, and they will not promote the spread of this species in natural environments. This Brachiaria is naturally suppressed by the shade of the forest, not presenting risks to the native species.

5.1.7 GMO Exclusion (CCB, B2.7)

No genetically modified organism (GMO) was used in the project activities during the monitoring period.

5.1.8 Inputs Justification (VCS, 3.19; CCB, B2.8)

Project activities do not foresee the usage of inputs, such as fertilizers, chemicals, or pesticides in the project area, since it is based on conservation activities that seek to avoid deforestation and forest degradation.

5.2 Offsite Biodiversity Impacts

5.2.1 Negative Offsite Biodiversity Impacts (CCB, B3.1) and Mitigation Actions (CCB, B3.2)

Considering it is a conservation project, no potential negative impacts on biodiversity outside the project zone was identified as a result of the project activities implementation, on the contrary, the biodiversity outside the project zone is expected to be benefit by the project since the project area acts as a forest remnant in an agricultural landscape.

5.2.2 Net Offsite Biodiversity Benefits (VCS, 3.19; CCB, B3.3)

Since no negative impacts on biodiversity outside the project zone was identified within the present monitoring period, the net offsite biodiversity benefits are positive.

5.3 Biodiversity Impact Monitoring

5.3.1 Biodiversity Monitoring Plan (CCB, B4.1, B4.2, GL1.4, GL3.4)

This section presents the biodiversity variables monitored, sampling methods, dates, frequency, locations, and results, for all PAI. As described in the PD, biodiversity monitoring plan includes the monitoring of four biodiversity groups (mammals, birds, reptiles, and amphibians) considering four biodiversity variables (species richness, number of threatened species, number of endemic species, and game species). Monitoring variables are directly linked to the project's biodiversity conservation objectives and to the predicted outcomes, outputs, and impacts identified in the project's causal model related to biodiversity conservation.

- Monitoring frequency

The minimum monitoring frequency required by the standard is five years. However, since the beginning of the project, twelve biodiversity monitoring campaigns were conducted across the project instances. In the present monitoring period, three fauna monitoring campaigns were conducted, the first was weld from February 20th to March 12th and covered instance 7 to 15, the second campaign was conducted from April 20th to May 2nd in instance PAI #1 – Fazenda Castanhal, and the third campaign was conducted from June 21st to July 04th in instance PAI #6 – Fazenda Lagoa Grande. The complete dates, frequency, and respective monitoring period for each PAI are described in

Table 82.

Instances 01 to 05 had already gone to four fauna campaigns each, whereas instance 06 to 15 had been gone to two survey campaigns. Since these instances reached a high sample effort, they will be monitored again within five years, following the standard requirements.

Table 82. Fauna monitoring campaigns conducted within the project areas.

Monitoring period	State	PAI	Campaign Date	Season
Initial Diagnosis	MT	PAI #1	30/04/2021 to 05/05/2021	Rainy
	AC	PAIs #2-5	05/04/2021 to 18/04/2021	Rainy
1st Monitoring Period (02/08/2021 to 19/10/2021)	MT	PAI #1	08/10/2021 to 16/10/2021	Dry
	AC	PAIs #2-5	09/10/2021 to 22/10/2021	Dry
2nd Monitoring Period (20/10/2021 to 31/12/2022)	AC	PAIs #2-5	26/03/2022 to 02/04/2022	Rainy
	PA	PAIs #7-15	27/06/2022 to 11/07/2022	Dry
	MT	PAI #1	10/09/2022 to 25/09/2022	Dry
	AC	PAIs #2-5	07/08/2022 to 22/08/2022	Dry
	AM	PAI #6	18/11/2022 to 01/12/2022	Rainy
3rd Monitoring Period (01/01/2023 to 31/12/2023)	PA	PAIs #7-15	24/02/2023 to 12/03/2023	Rainy
	MT	PAI #1	20/04/2023 to 02/05/2023	Rainy
	AM	PAI #6	21/06/2023 to 04/07/2023	Dry

- Sampling methods

The sampling methods followed the methodology described in the monitoring plan of the registered PD. Four groups were monitored: mammals, birds, reptiles, and amphibians. The sampling was conducted using the active search and camera traps survey methods. The active search method consisted of free surveys carried out by specialists searching for animals (e.g., sighting or vocalizations) or their signs (e.g., footprints, tracks, feces, bones, etc.), walking at a constant speed rate along pre-existing trails. The objective of this method is to provide the most complete and reliable list of species for the site surveyed. Walking routes were conducted within the project areas, as well as small boat routes that covered streams and adjacent environments. All visual and/or acoustic records that resulted in an unequivocal identification of the species were included. Visual identification was made using binoculars (Bushnell 10x42) and recording equipment (Sony PX240 and Roland R05) and identification books when necessary. All records were listed in a field spreadsheet and verified by photographic records whenever possible.

For mammals and birds, the survey was conducted in two time periods, the first period beginning at sunrise until 1pm and the second period beginning after the hottest hours, around 3:00 pm, and lasting into the night period. Whereas for amphibians and reptiles the data collection occurred during the morning period (5:00 am - 12:00 p.m.) and twilight/night (4:00 p.m. - 10:00 p.m.) to cover the

period of greatest amphibian and reptile activity. Camera traps were installed on fauna trail/paths, attached to tree trunks approximately 45 cm above the ground (Figure 59). The camera remained in operation for 24 hours, and attractive baits were used to enhance the recordings.

All survey campaigns were conducted by fauna consultant specialists, the evidence is available in the **"**APPENDIX_BIODIVERSITY > Consultants_Reports". All the data collected by the consults is later included in a data base where all the information regarding nomenclature, endemism, and threat is standardized and summarized in a unique document and one species list spreadsheet, both available in "APPENDIX_BIODIVERSITY > Bio_Results_Summary**"**.



Figure 58. Active search method.



Figure 59. Camera trap installation.

- Monitoring Results

In each campaign, the sampling effort is increased and the chance to find new species is higher. For that reason, it is important to present the collected information from all biodiversity campaigns, showing the cumulative number of species richness, number of threatened, endemic, and game species found in the project area.

The fauna monitoring activities carried out in the project found a total of **859 species**, including 593 birds, 62 mammals, 80 reptiles and 124 amphibians. Regarding the level of endemism, 346 species are endemic to the Amazon Forest (200 birds, 29 mammals, 32 reptiles and 85 amphibians). Following the IUCN Red List classification, 30 species recorded during the fauna monitoring activities are classified under some level of threat: 25 species are classified as Vulnerable (VU), 3 species are classified as Endangered (EN) and 2 species are classified as Critically Endangered (CR). The

Endangered species are the mammals *Ateles chamek*, *Inia geoffrensis* and *Pteronura brasiliensis*. The Critically Endangered species are the bird *Psophia obscura* and the primate *Cebus kaapori*.

In the previous Monitoring Reports the bird species *Pteroglossus bitorquatus* was classified as Endangered (EN) of extinction. However, in recent IUCN assessment, its level of threat was reduced to Near Threatened (NT) category, therefore its name was removed from project's endangered species list.

Table 83. Cumulative results of the fauna monitoring carried out in the Brazilian Amazon Grouped Project.

	Amphibians	Birds	Mammals	Reptiles	Total
Richness	124	593	62	80	859
Endemic Species	85	200	29	32	346
Endangered Species*	0	13	15	2	30

*Classified as Vulnerable, Endangered and Critically Endangered according to IUCN Red List.

The complete results describing the number of species recorded in each PAI and monitoring campaigns are found in "APPENDIX_BIODIVERSITY > Consultants_Reports"

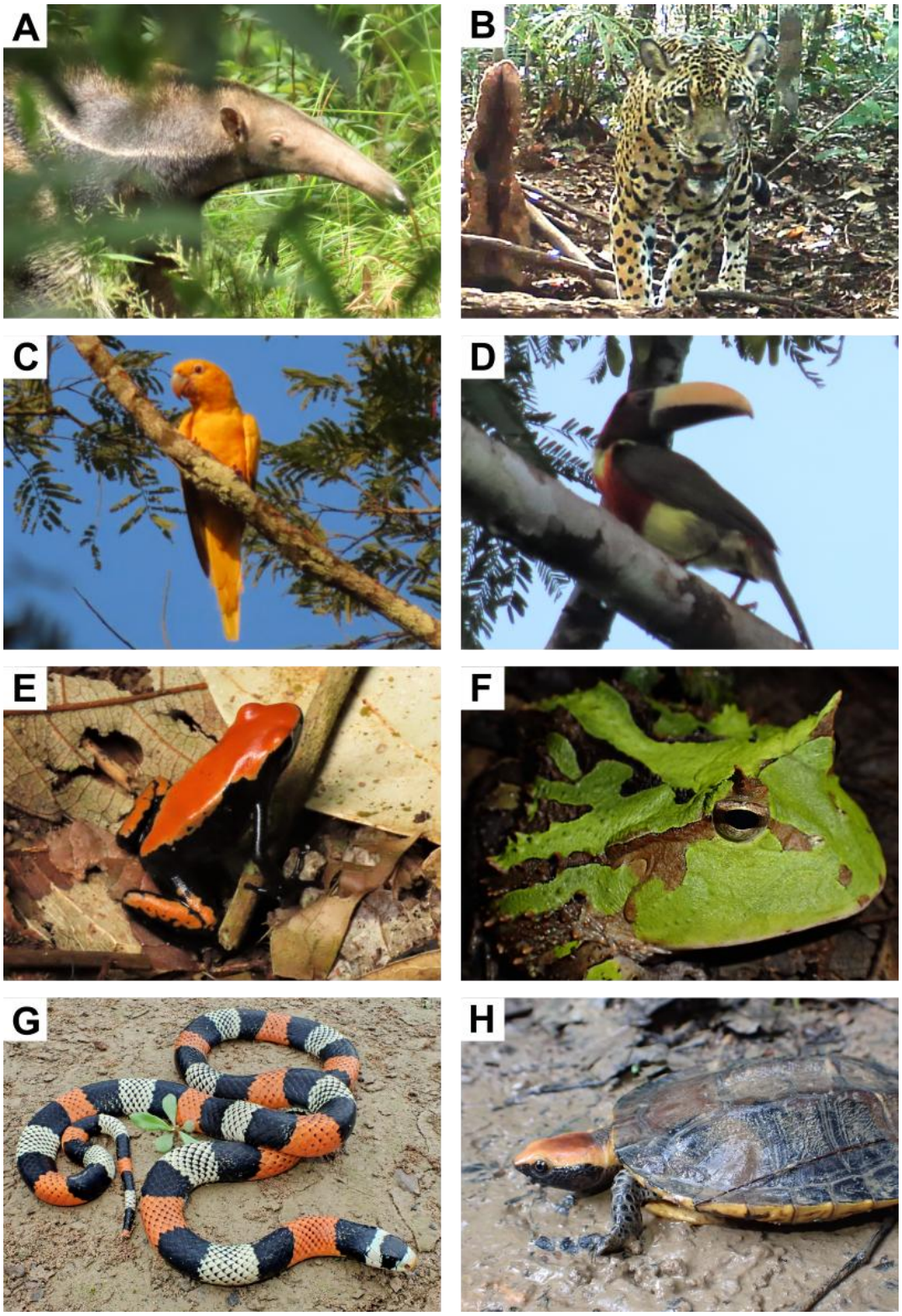


Figure 60. A) Myrmecophaga tridactyla, B) Panthera onca, C) Guaruba guarouba, D) Pteroglossus bitorquatus, E) Adelphobates galactonotus, F) Ceratophrys cornuta, G) Erythrolamprus aesculapii, H) Platemys platycephala. Locations: PAI#7-15 (C, E, G and H), PAI#6 (B) and PAI #1 (A, D and F).

5.3.2 Biodiversity Monitoring Plan Dissemination (CCB, B4.3)

The monitoring plan and monitoring results will be available on Verra's website, through the full monitoring reports documents. In addition, biodiversity monitoring results have been posted on BRC's social media and website. Results summaries were also communicated to the local communities through meetings and workshops carried out in February 2023 in Iaco River Communities (associated with PAI#2-5) and in June of 2023 in the Curara Community (associated with PAI #6 Fazenda Lagoa Grande). Furthermore, individualized reports detailing the biodiversity monitoring results were prepared for the farm owners. The complete information about these activities is available in "APPENDIX_BIODIVERSITY > Bio_Monit_Dissemination".

5.4 Optional Criterion: Exceptional Biodiversity Benefits

- **High Biodiversity Conservation Priority Status (GL3.1/ GL3.2/ GL3.3/ GL3.4)**

In the last monitoring period, the project was validated in the Gold Level for Exceptional Biodiversity Benefits by meeting the vulnerability criteria of the CCB Standard: v3.1 (GL3.1.a). The monitoring revealed the presence of five globally threatened species classified as EN and CR by the IUCN Red List (*Ateles chamek*, *Inia geoffrensis*, *Pteronura brasiliensis*, *Psophia obscura* and *Cebus kaapori*) within the project area. These species trigger the vulnerability criteria and classify the project area as a Key Biodiversity Area (KBA) (Langhammer et al. 2007).

All trigger species found within the project area are suffering population decline due to habitat loss caused by forest degradation and deforestation. In this scenario, the most important measure taken by the project activities to maintain the survival of the trigger species is the conservation of the forest cover and avoidance of deforestation within the project area. The project areas will act as biodiversity remnants in a landscape that is mostly dominated by grazing and agriculture.

Table 84. Trigger species and respective IUCN Red List Status and PAI occurrence.

Species	Class	IUCN Red List Status	Occurrence			
			PAI #1	PAI #2-5	PAI #6	PAI #7-15
Ateles chamek	Mammalia	EN	X	X	X	
Inia geofrensis	Mammalia	EN			X	
Pteronura brasiliensis	Ave	EN			X	

Species	Class	IUCN Red List Status	Occurrence			
			PAI #1	PAI #2-5	PAI #6	PAI #7-15
Psophia obscura	Ave	CR				X
Cebus kaapori	Mammalia	CR				X

All monitoring campaigns carried out in the project area registered the presence of at least one threatened species. The complete results describing the occurrence of the endangered species in each region are available in "APPENDIX_BIODIVERSITY > Bio_Results_Summary". The complete information about the IUCN Red List assessment, species geographic range map, population trends, threats and ecology characteristics are available in "APPENDIX_BIODIVERSTIY > Trigger_Species_Assessment".

5.4.1 Trigger Species Population Trends (CCB, GL3.2, GL3.3)

The tables below describe actions taken to maintain population status of the trigger species in the project zone.

Table 85. Trigger Species Population Trends

Trigger Species	*Ateles chamek*
With-project Scenario	*Ateles chamek* occurrence is restricted to intact primary forests, where it remains widespread and relatively common. However, this species is highly sensitive to human disturbance and does not persist in areas affected by human activities. The main threats to *A. chamek* include habitat loss due to deforestation and hunting for human consumption. By 2002, it was estimated that the species had already lost over 15% of its suitable habitat, with projections suggesting a potential loss of up to 40% by 2050 (Rabelo et al., 2018). The IUCN also estimates that the species' population has declined 50% in the last 45 years, a trend that is expected to continue in the future (Alves et al., 2021). The project activities ensure the survival of *A. chamek* through the conservation of the forest cover and prevention

	of legal and illegal deforestation within the project area. The project area serves as a habitat remnant ensuring the survival of the species locally. Without the project, the area would be dominated by grazing activities.

Table 86. Trigger Species Population Trends

Trigger Species	*Psophia obscura*
With-project Scenario	*P. obscura* are forest-interior specialists, and deforestation and forest fragmentation are the main threats to the species' survival. Moreover, their large body characteristics and group living behavior makes them very attractive for hunters (Carvalho et al., 2022). The project's activities support the species' survival by conserving native forest cover, which serves as habitat remnants in a landscape predominantly dominated by grazing and agriculture.

Table 87. Trigger Species Population Trends

Trigger Species	*Cebus kaapori*
With-project Scenario	The greatest threats to the survival of *C. kaapori* include the conversion of forests into cattle ranches and soybean plantations, the construction of hydroelectric dams, hunting pressure, and the illegal pet trade. These threats are so severe that the species has been listed among the top 25 most endangered primates (Mittermeier et al., 2012). In the state of Pará, population densities are critically low, with estimates of 0.28 sightings per 10 km (Pereira, 2002) and 0.16-0.19 groups per 10 km (Camargo, 2008). The project activities aim to maintain the survival of the specie through the conservation of the forest cover and avoidance of legal and illegal deforestation within the project area. The project area acts as biodiversity remnants in a landscape that is mostly dominated by grazing and agriculture.

Table 88. Trigger Species Population Trends

Trigger Species	*Inia geoffrensis*
With-project Scenario	The main threats to the species survival are incidental mortality from entanglement (bycatch) in fishing gear, intentional killing for bait, as well as habitat degradation caused by human activities (i.e., dam construction, port development, mining, etc.) (da Silva et al., 2018). By preventing deforestation, the project activities promote the conservation of vital ecosystems, such as flooded forests and riverine habitats, which are essential for the species' survival. These ecosystems provide critical resources like food and shelter for the species, ensuring their continued existence.

Table 89. Trigger Species Population Trends

Trigger Species	*Pteronura brasiliensis*
With-project Scenario	The species is mainly threatened by human activities such as destruction of riparian zones, overfishing, water contamination by mining and pesticides, diseases spread by domestic animals, mismanaged tourism, drowning in fishing nets, and captivity as pets (Groenendijk et al., 2023). The project activities help the species conservation preventing the deforestation of riparian zones, commonly used by this species for foraging, shelter and reproduction.

6 REFERENCES

Alves, S.L., Ravetta, A. L., Paim, F.P., Mittermeier, R.A., Rabelo, R.M., Wallace, R.B., Messias, M.R., Calouro, A.M., Rylands, A.B., de Melo, F.R. & Boubli, J.P. 2021. Ateles chamek (amended version of 2020 assessment). The IUCN Red List of Threatened Species 2021: e.T41547A191685783.

Camargo, C. C. 2008. Ecologia e comportamento do macaco-caiarara (Cebus kaapori). Relatório Técnico. Museu Paraense Emílio Goeldi. 18p.

Carvalho Jr., E. A. R. et al. 2022. 'Current status of the Critically Endangered Black-winged Trumpeter Psophia obscura in one of its last strongholds', Bird Conservation International, pp. 1–14. doi: 10.1017/S0959270922000077.

da Silva, V. M. F., Freitas, C. E. C., Dias, R. L., Martin, A.R. 2018. Both cetaceans in the Brazilian amazon show sustained, profound population declines over two decades. PloS One 13(5): e0191304

Groenendijk, J., Leuchtenberger, C., Marmontel, M., Van Damme, P.A., Wallace, R. & Schenck, C. 2023. Pteronura brasiliensis (amended version of 2022 assessment). The IUCN Red List of Threatened Species 2023: e.T18711A244867206. https://dx.doi.org/10.2305/IUCN.UK.2023-1.RLTS.T18711A244867206.en

MMA - Ministério do Meio Ambiente. Áreas prioritárias para a Conservação, Utilização Sustentável e Repartição dos Benefícios da Biodiversidade - 2ª Atualização. Brasília: MMA, 2023.

Mittermeier, R. A.; Schwitzer, C.; Rylands, A. B.; Taylor, L. A.; Chiozza, F.; Williamson, E. A.; Wallis, J. (eds). 2012. Primates in Peril: The World's 25 Most Endangered Primates 2012–2014. IUCN/SSC Primate Specialist Group (PSG), International Primatological Society (IPS), Conservation International (CI), and Bristol Conservation and Science Foundation, Bristol, UK. 40pp. Rabelo R.M., Goncalves J.R., Silva F.E., Rocha D.G., Canale G.R., Bernardo C.S.S., Boubli J.P. 2018. Predicted distribution and habitat loss for the Endangered black-faced black spider monkey (Ateles chamek) in the Amazon. Oryx.

7 APPENDIX: FOREST COVER BENCHMARK MAPS DETAILS – LEAKAGE

This section presents detailed maps for Leakages' Forest Cover Benchmark.

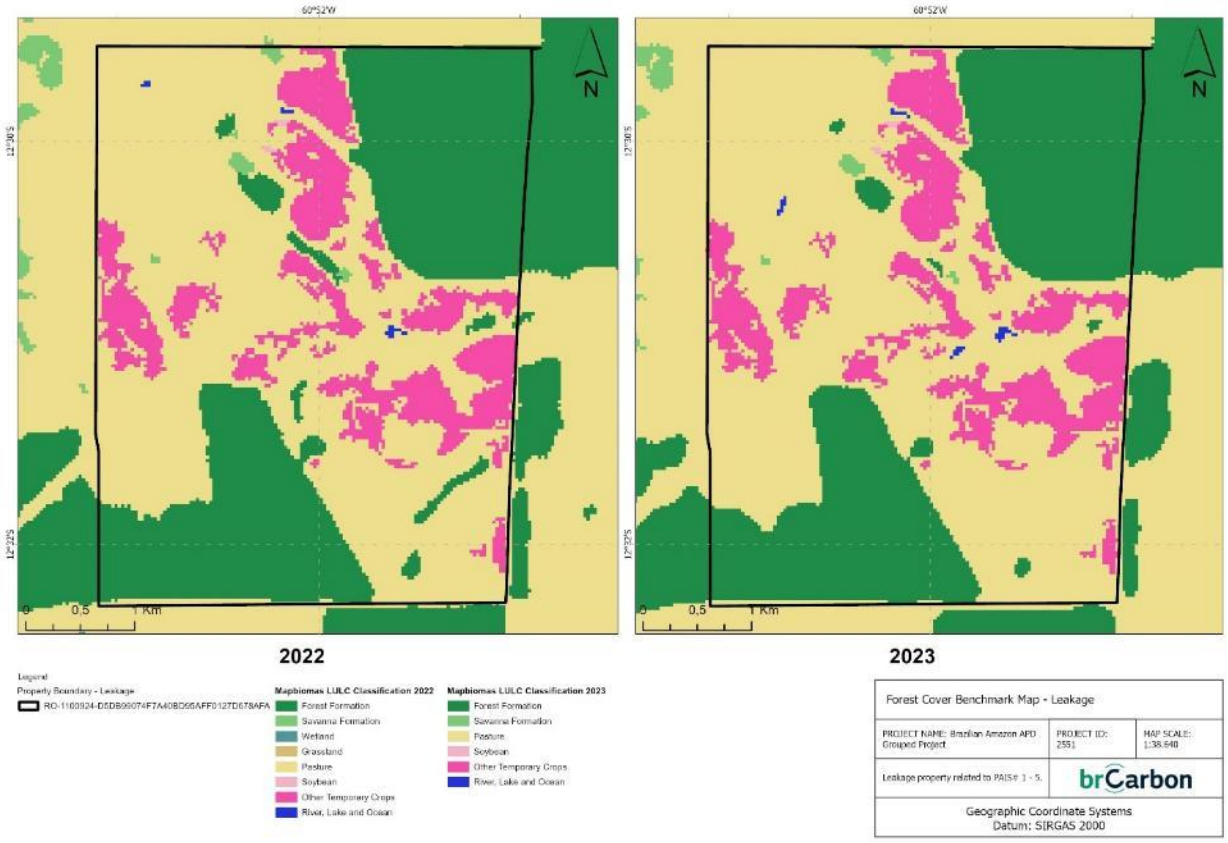


Figure 61. Leakage Property related to PAI#1 to PAI#5.

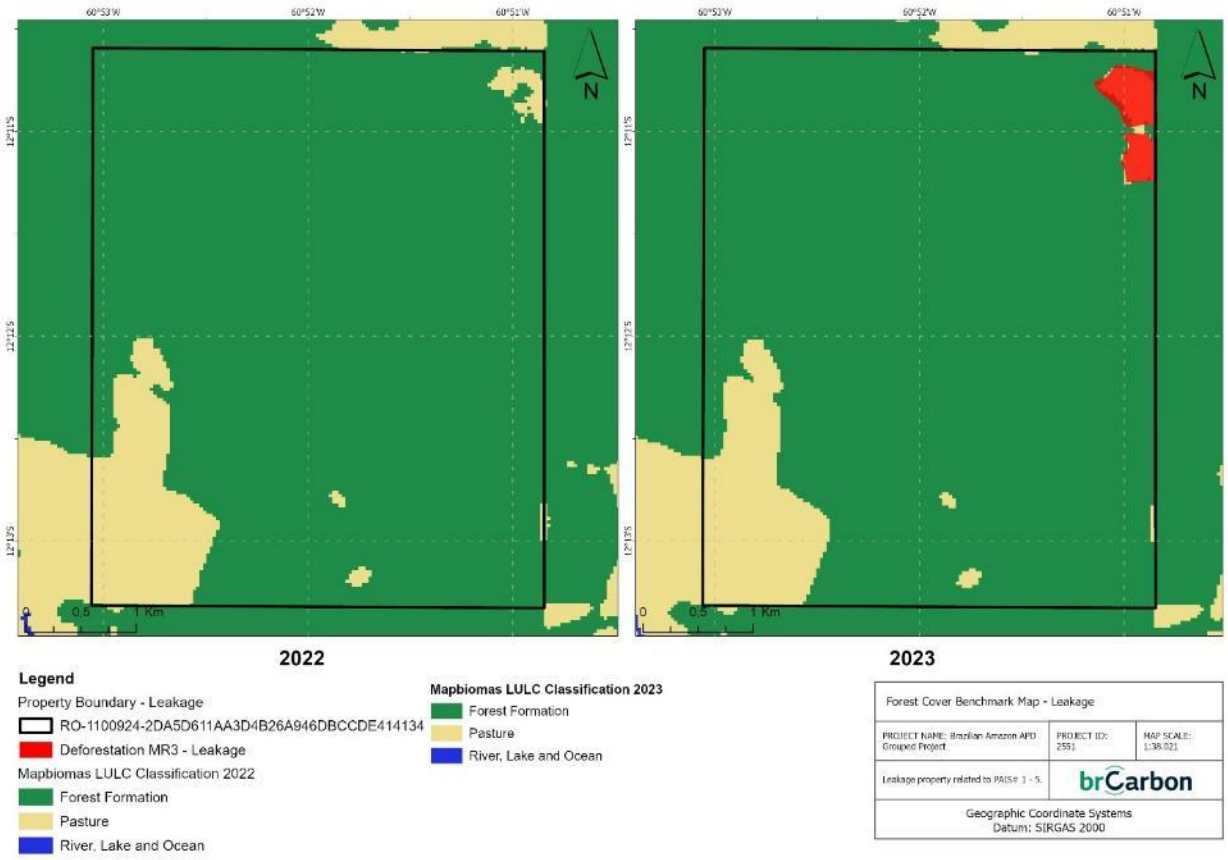


Figure 62. Leakage Property related to PAI#1 to PAI#5.

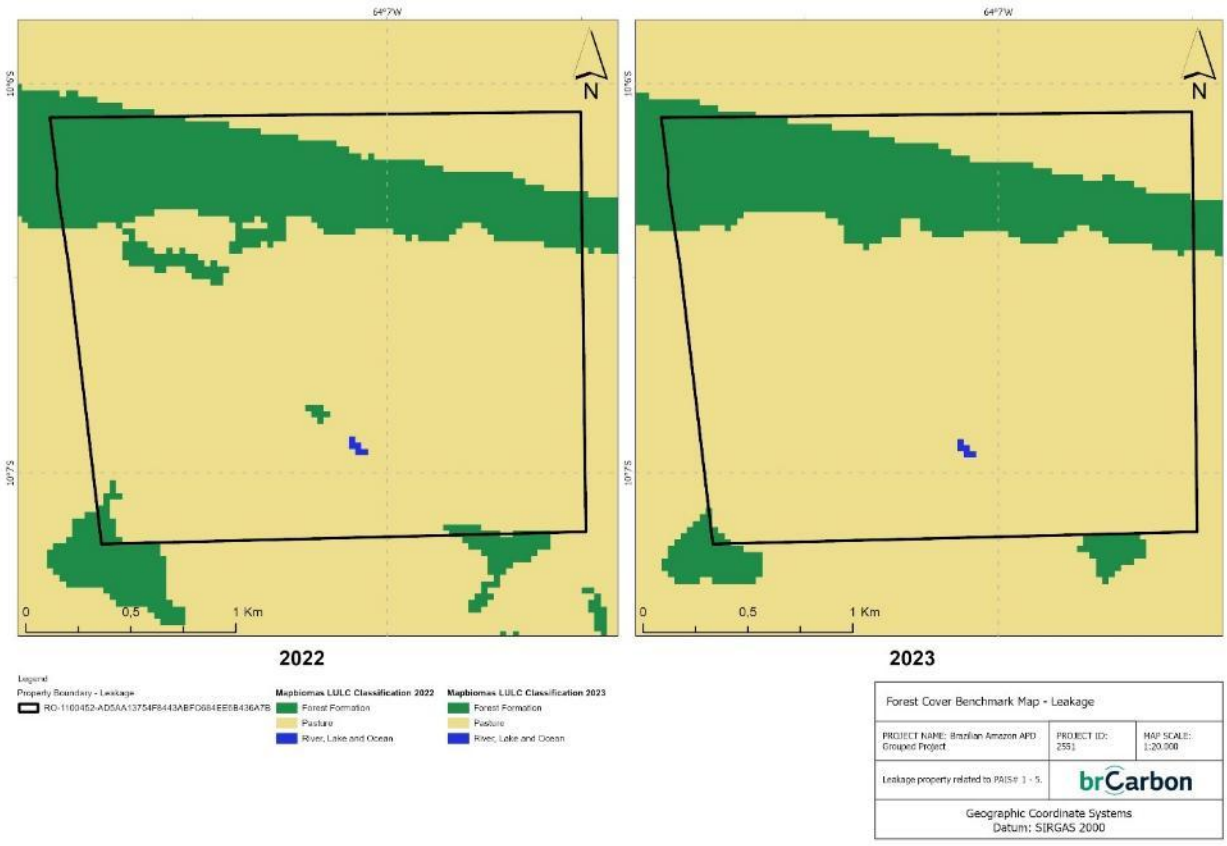


Figure 63. Leakage Property related to PAI#1 to PAI#5.

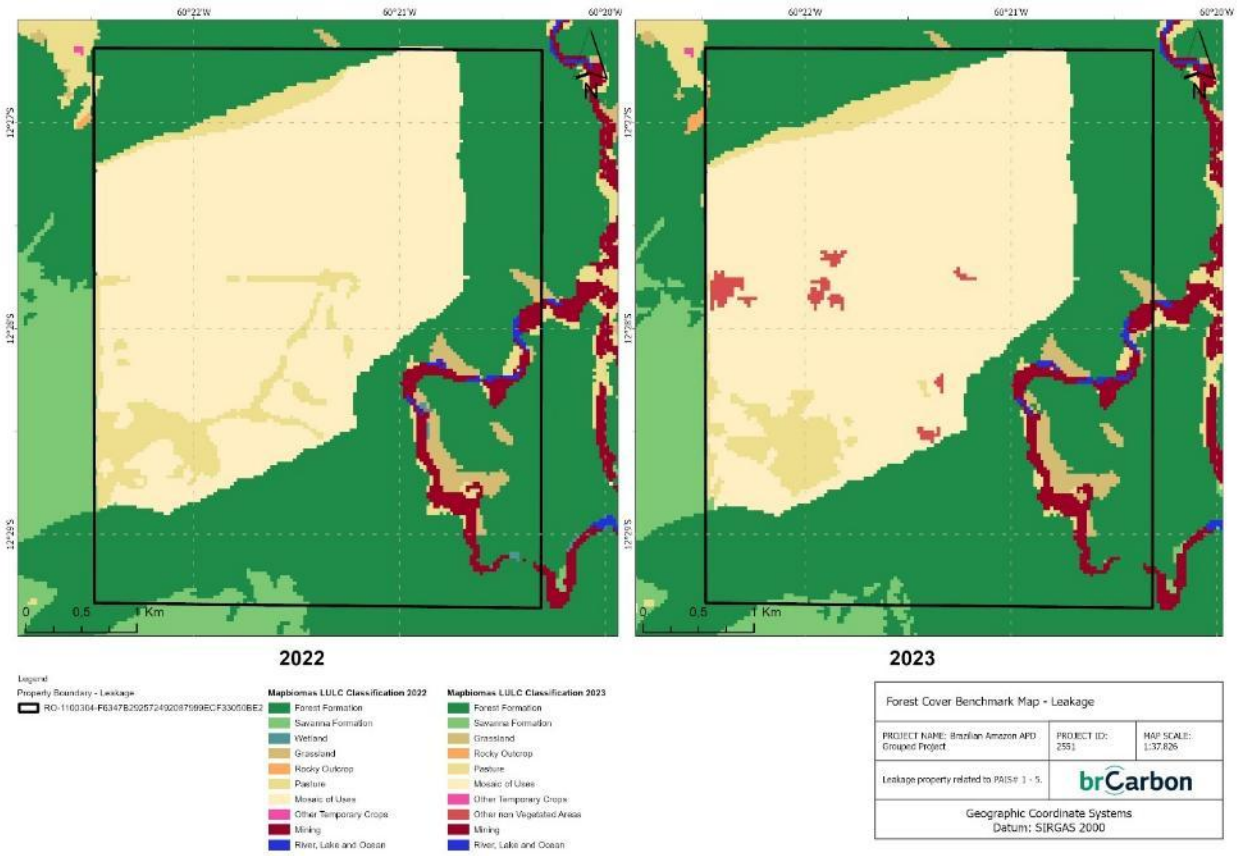


Figure 64. Leakage Property related to PAI#1 to PAI#5.

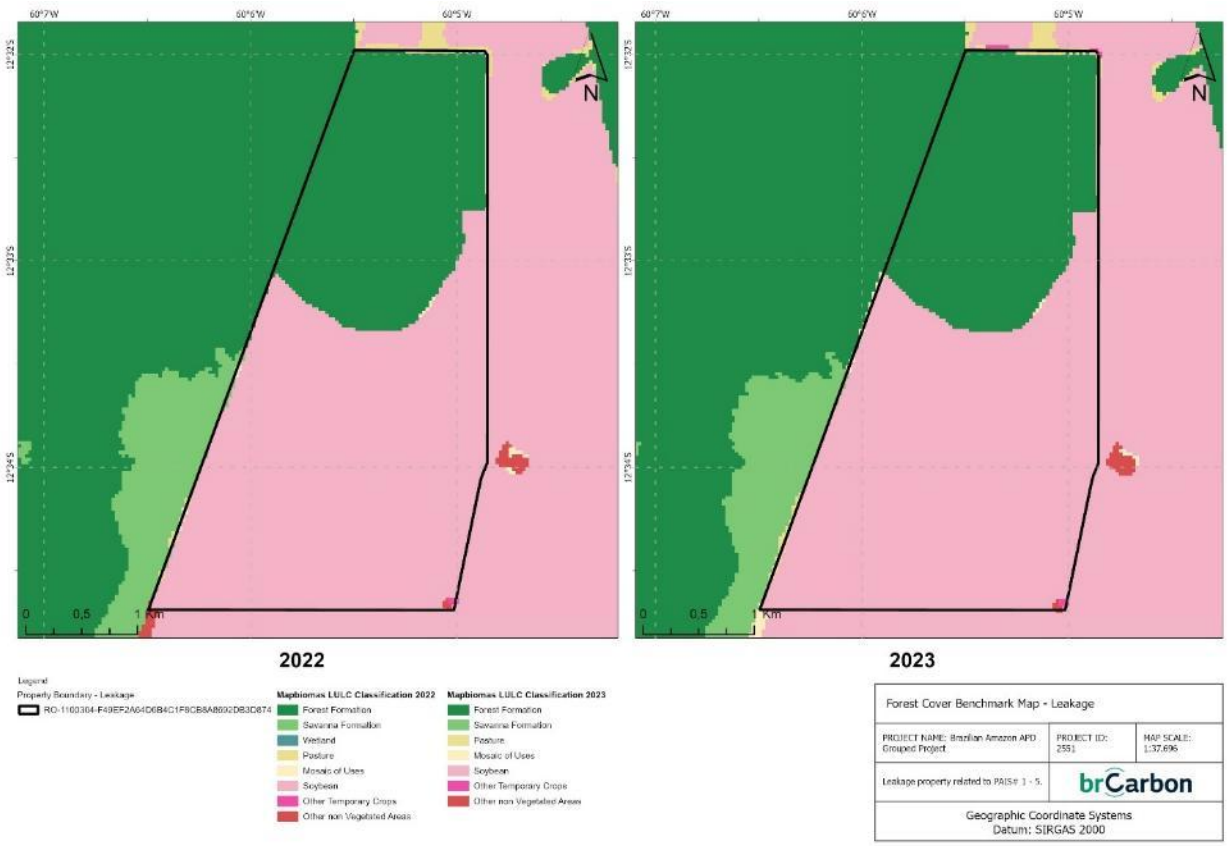


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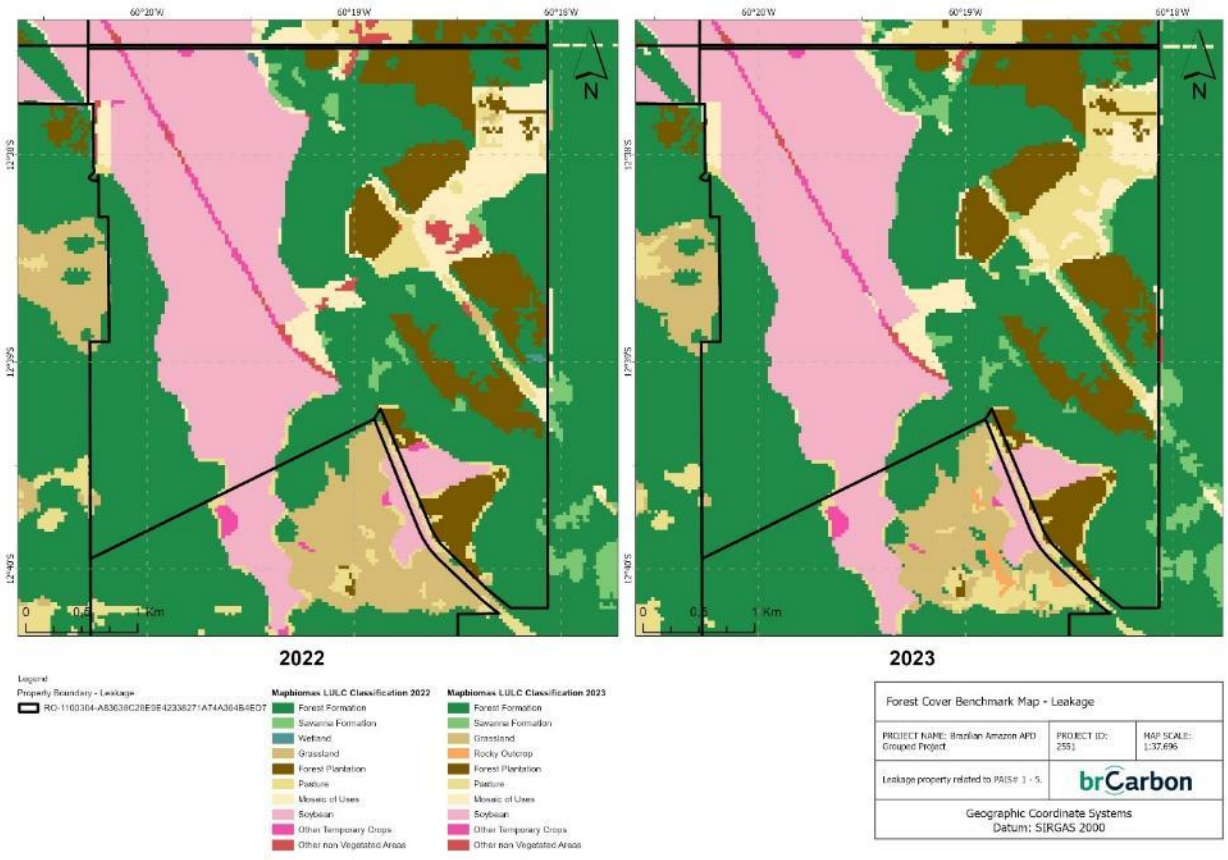


Figure 66. Leakage Property related to PAI#1 to PAI#5.

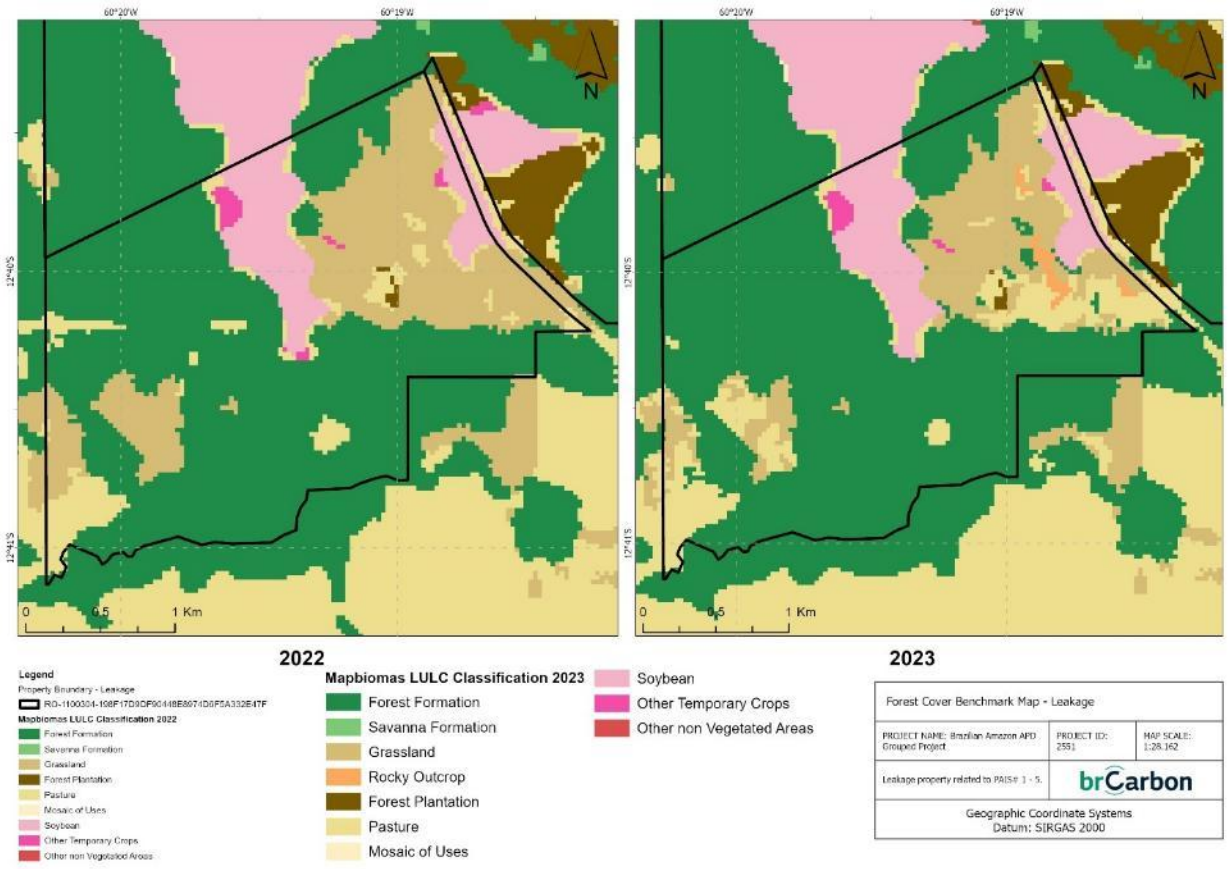


Figure 67. Leakage Property related to PAI#1 to PAI#5.

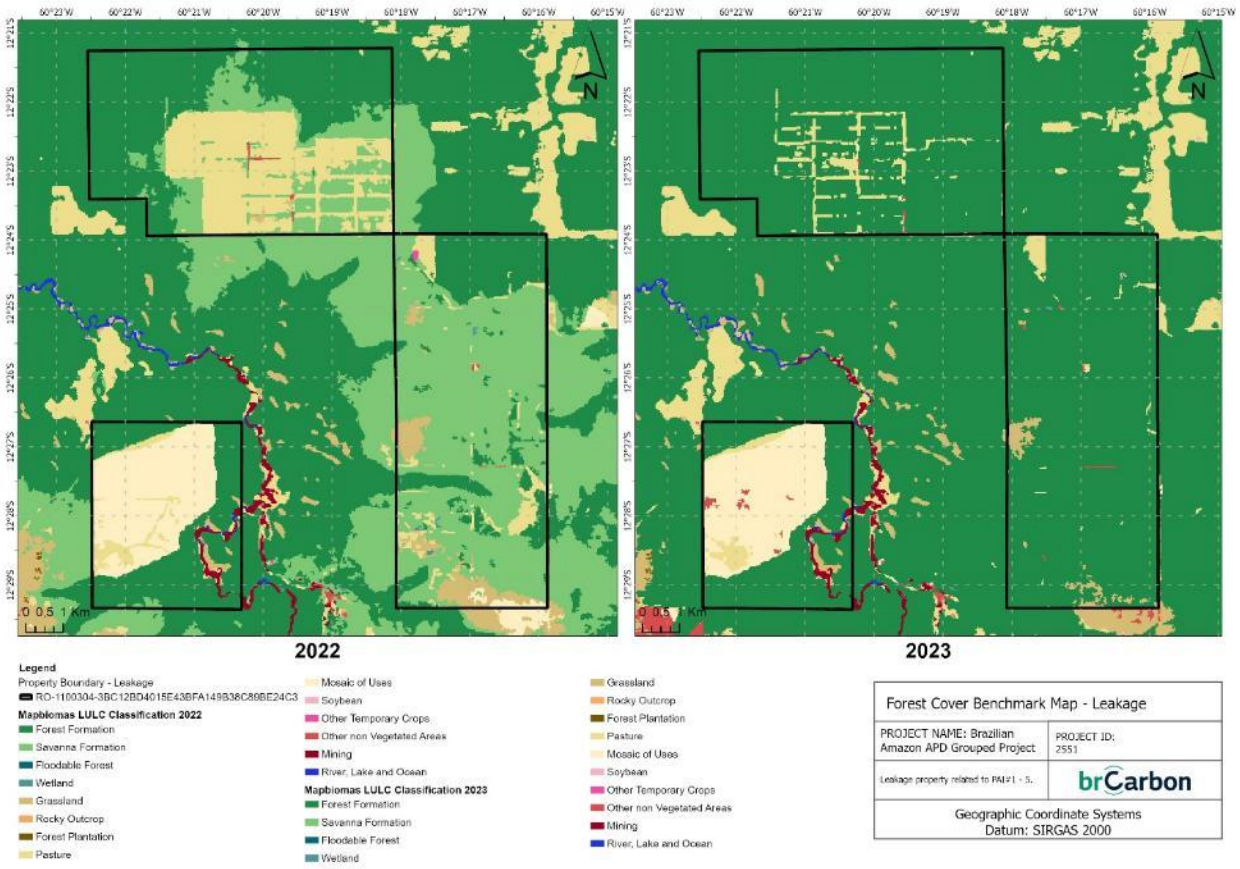


Figure 68. Leakage Property related to PAI#1 to PAI#5.

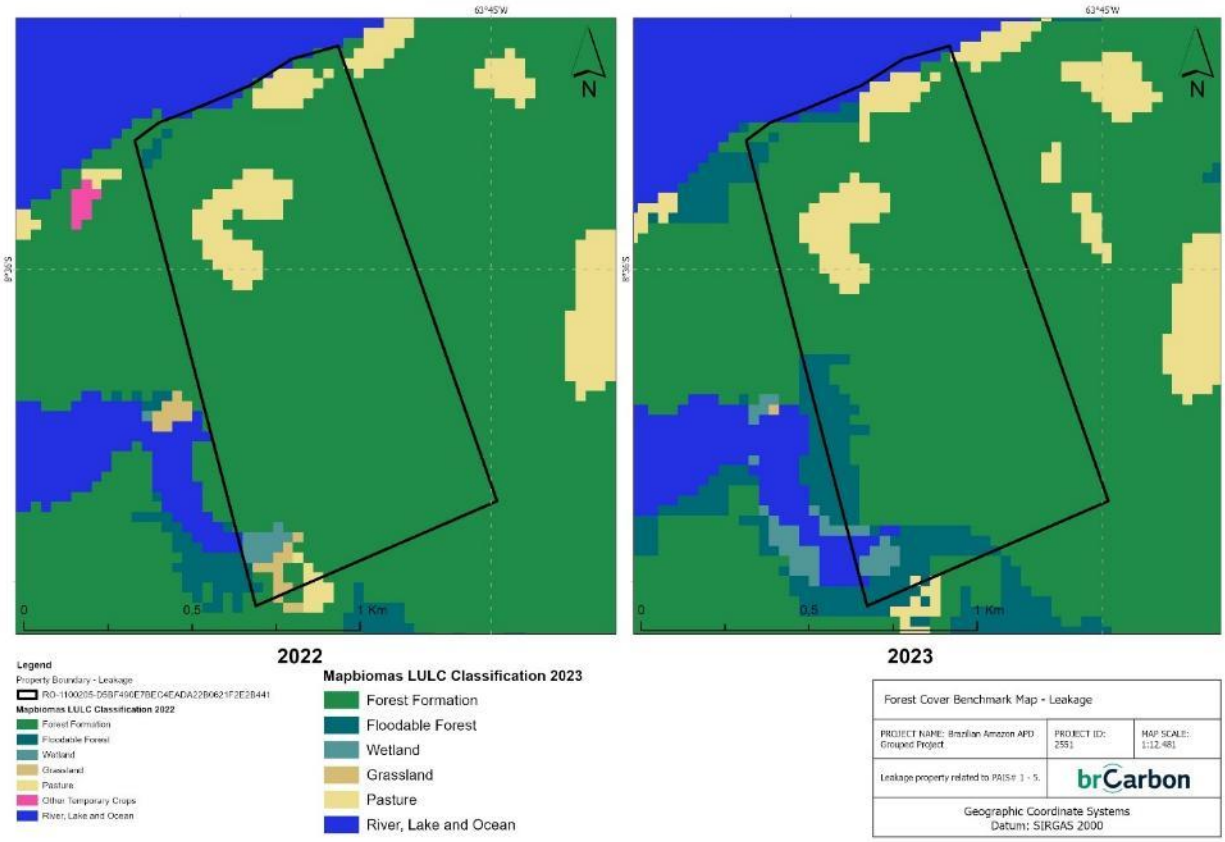


Figure 69. Leakage Property related to PAI#1 to PAI#5.



Figure 70. Leakage Property related to PAI#1 to PAI#5.

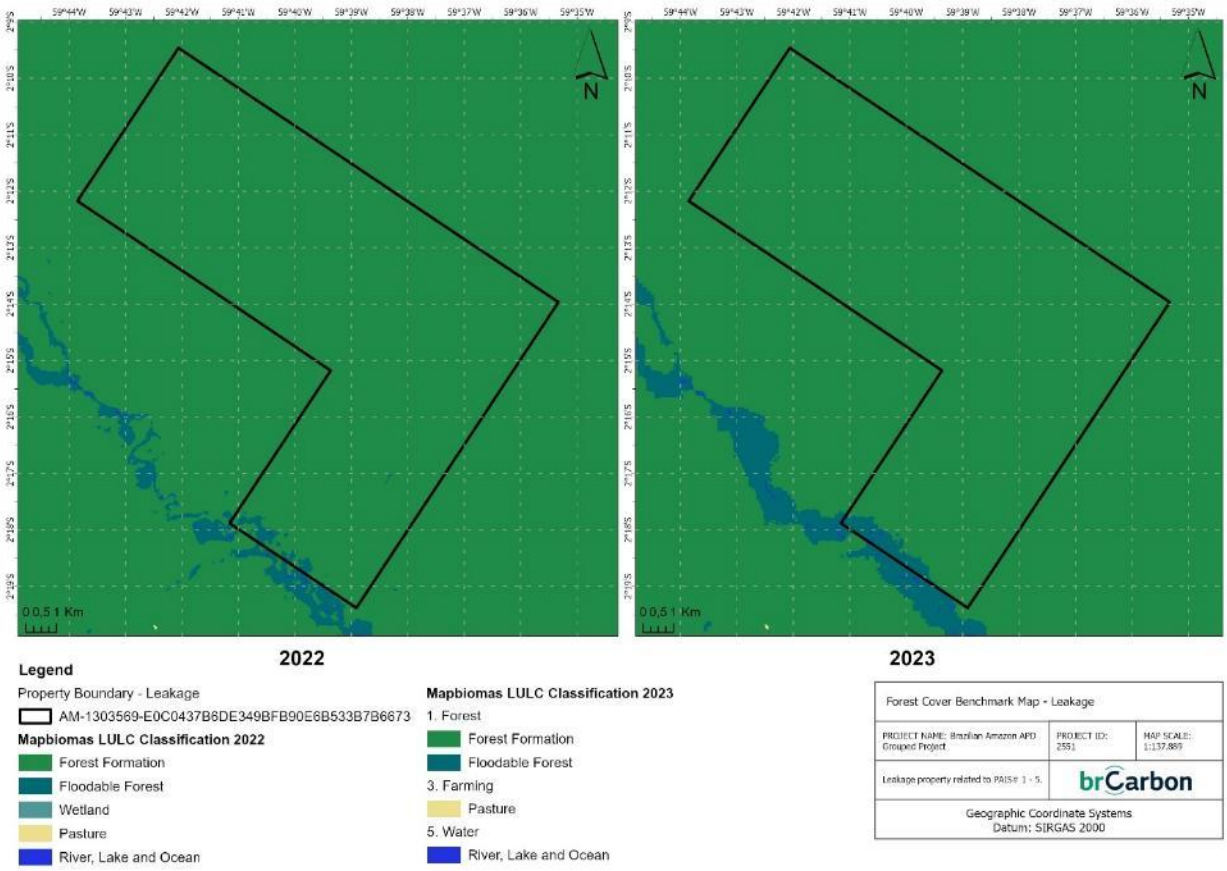


Figure 71. Leakage Property related to PAI#1 to PAI#5.

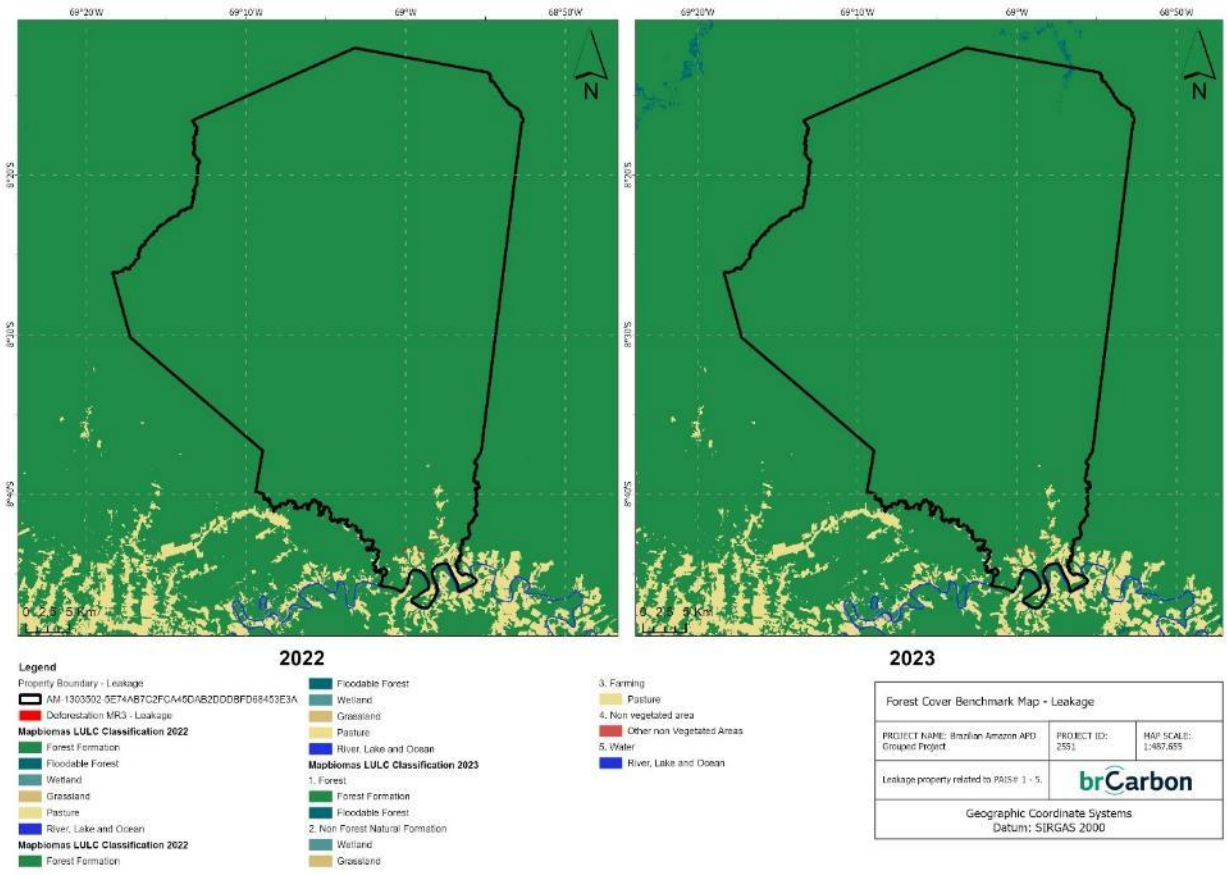


Figure 72. Leakage Property related to PAI#1 to PAI#5.

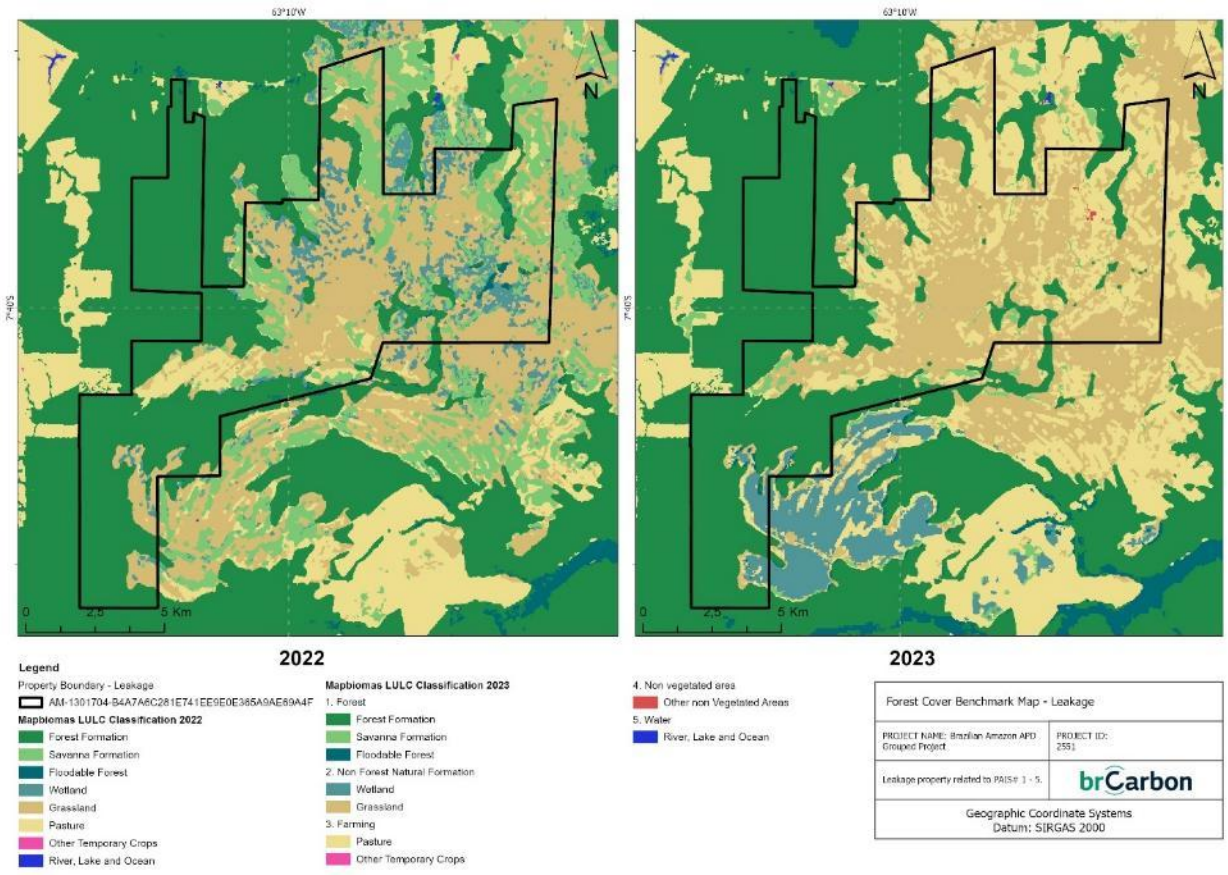


Figure 73. Leakage Property related to PAI#1 to PAI#5.

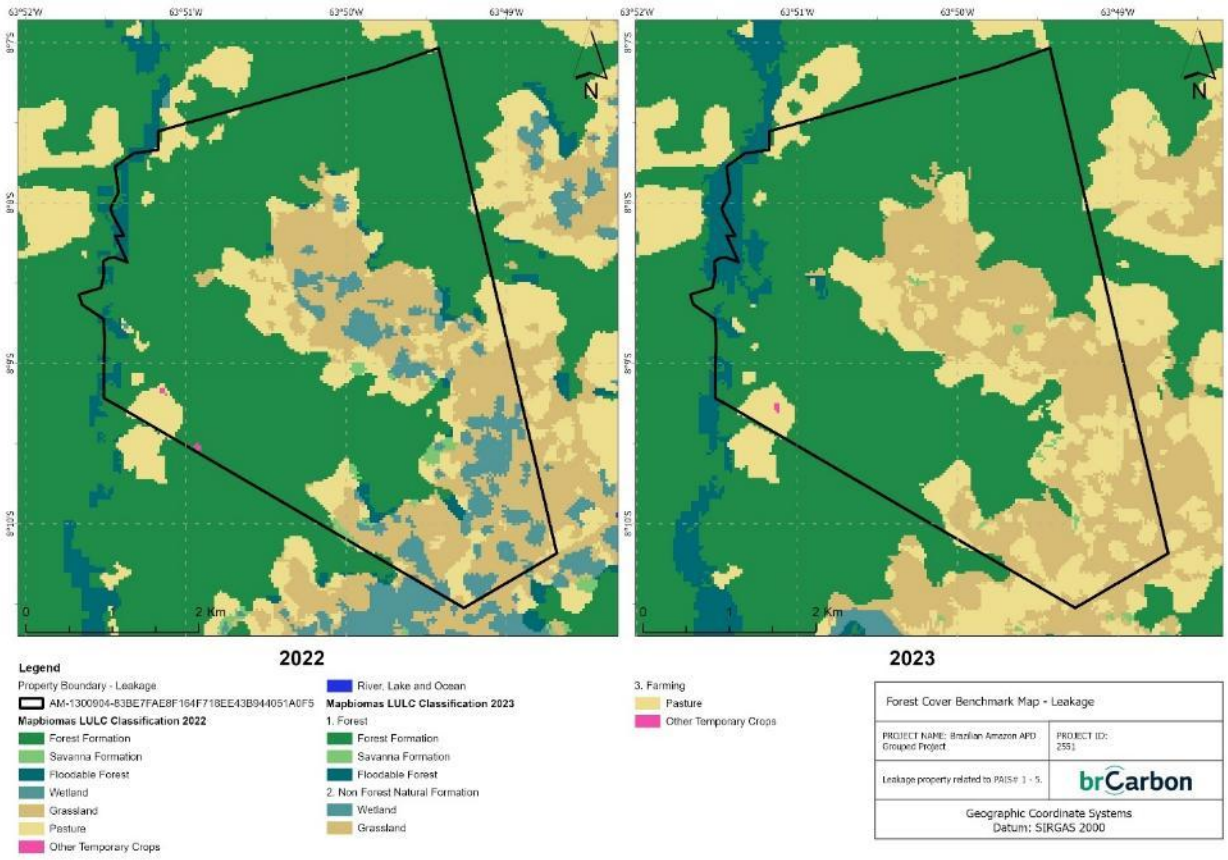


Figure 74. Leakage Property related to PAI#1 to PAI#5.

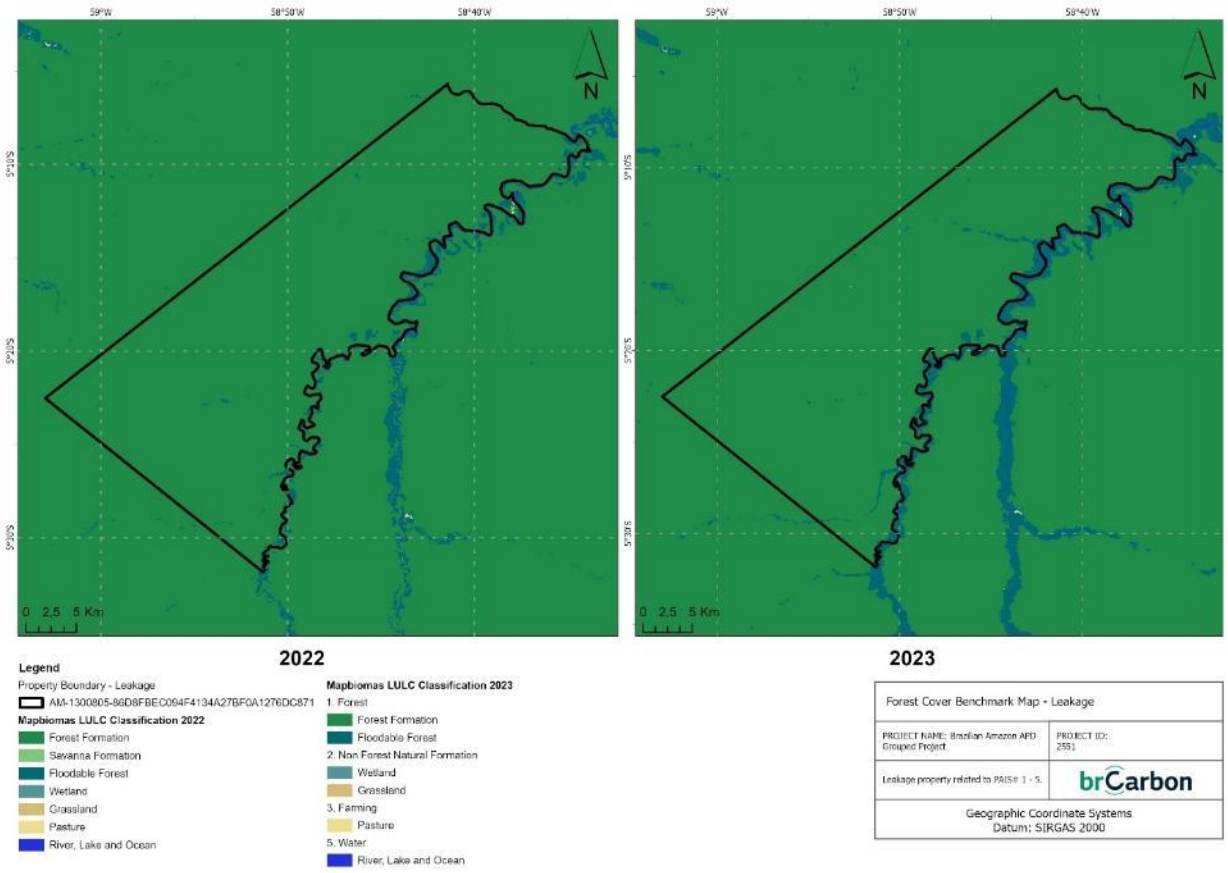


Figure 75. Leakage Property related to PAI#1 to PAI#5.

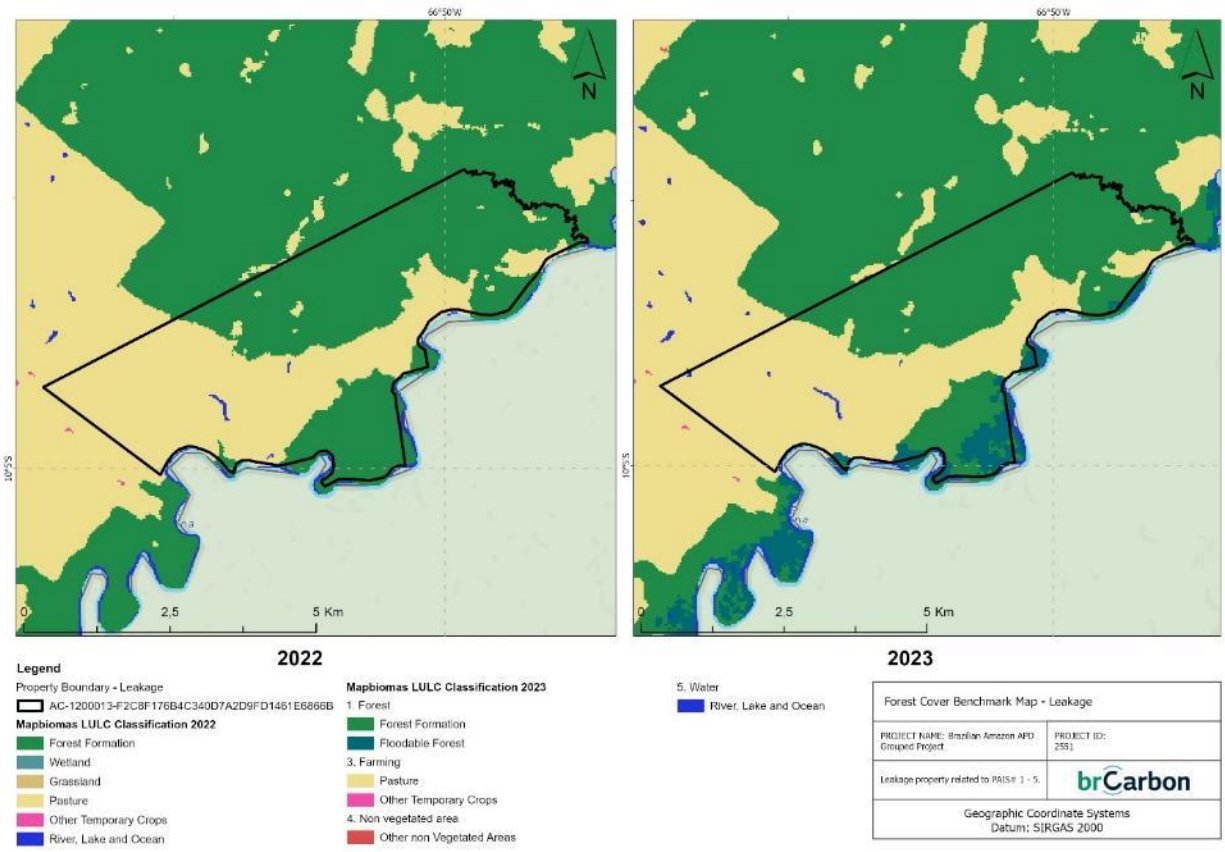


Figure 76. Leakage Property related to PAI#1 to PAI#5.

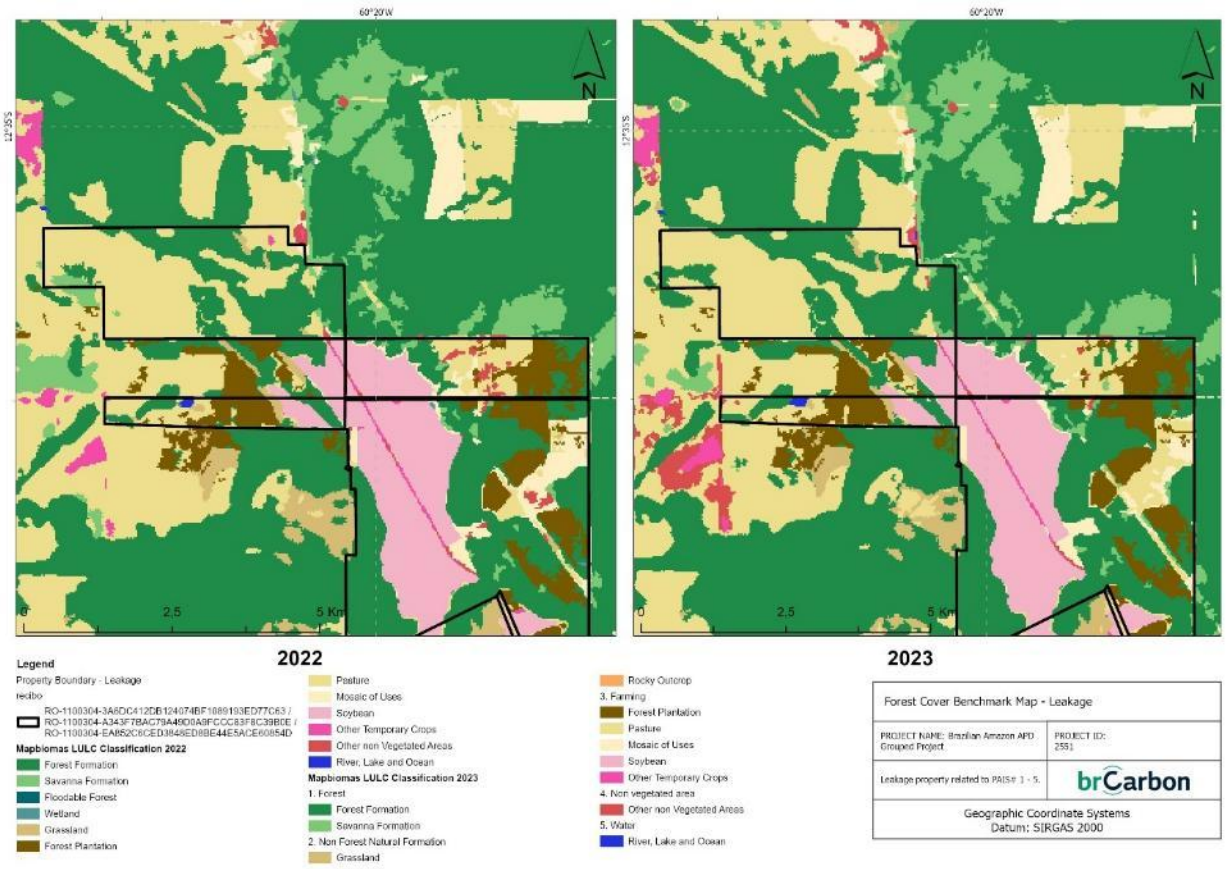


Figure 77. Leakage Property related to PAI#1 to PAI#5.

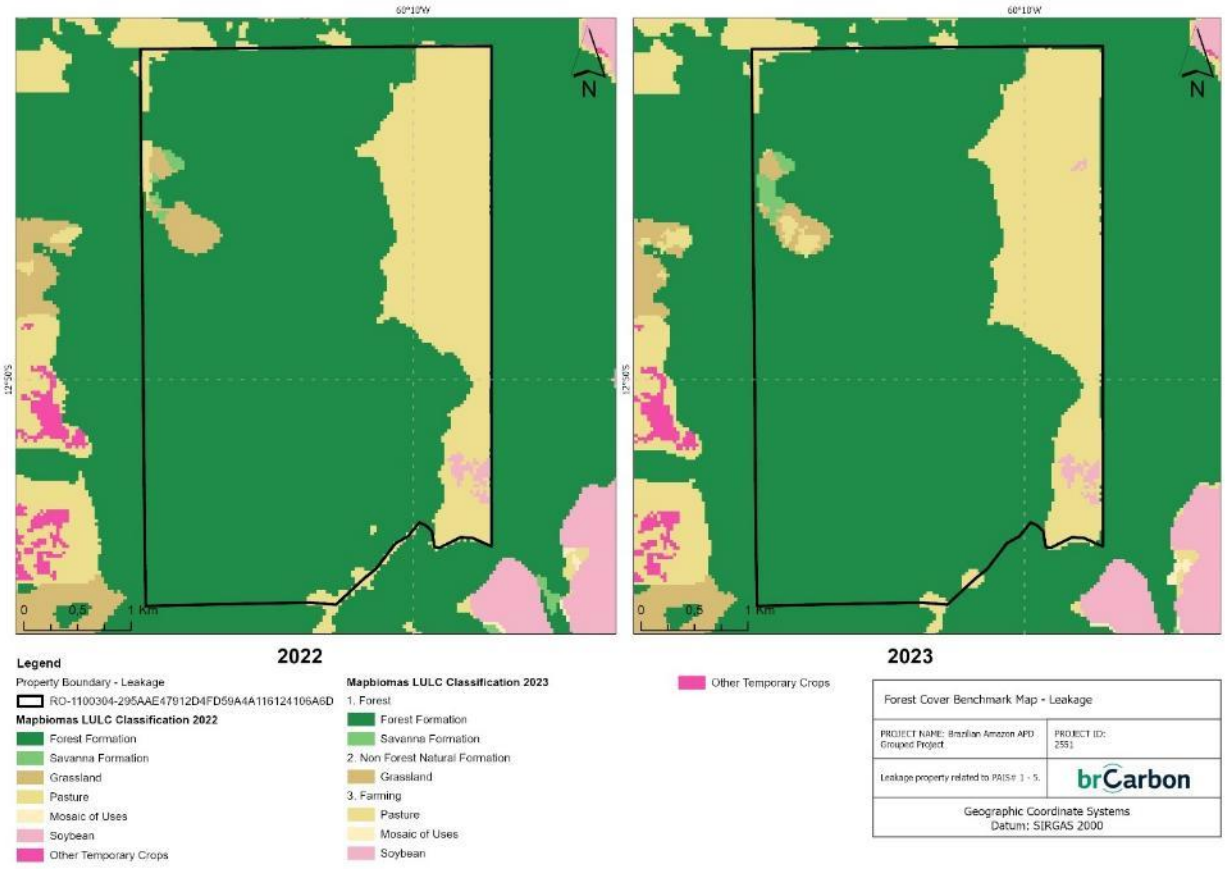


Figure 78. Leakage Property related to PAI#1 to PAI#5.

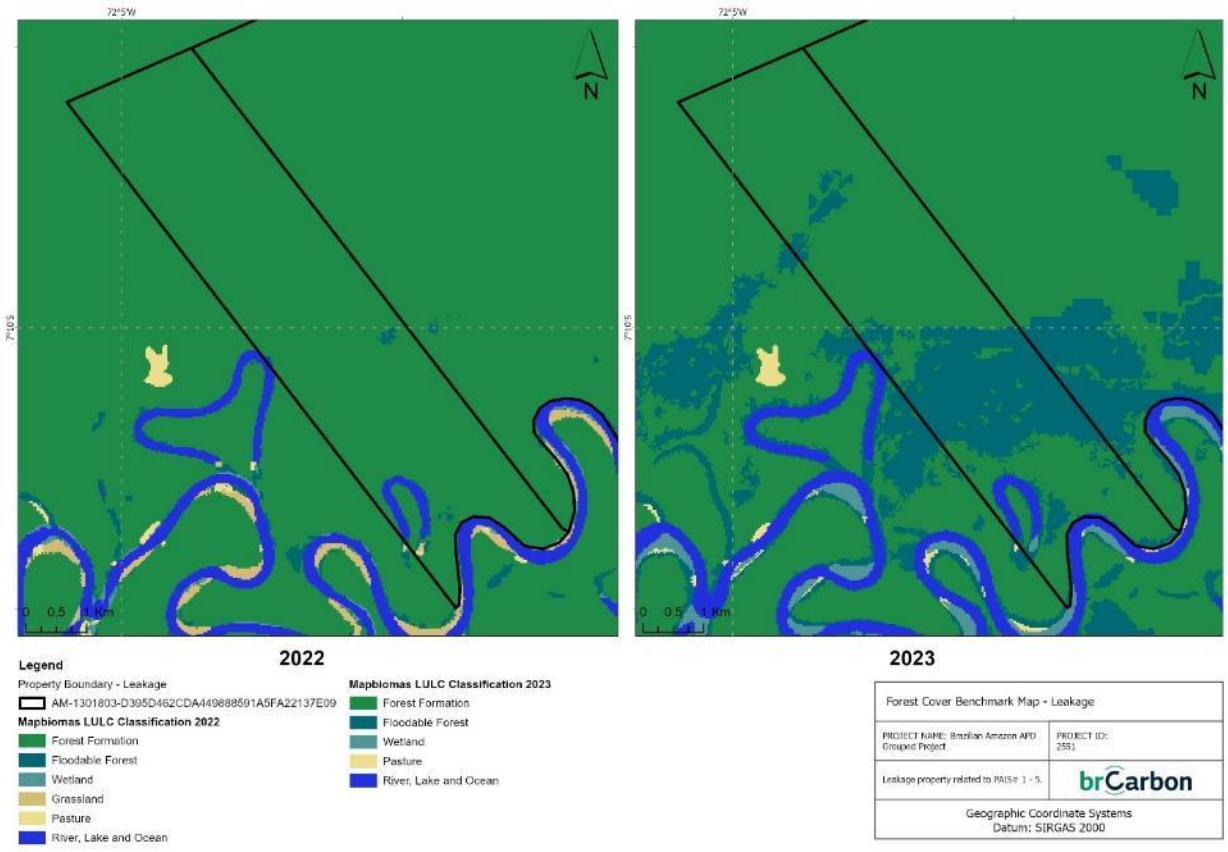


Figure 79. Leakage Property related to PAI#1 to PAI#5.

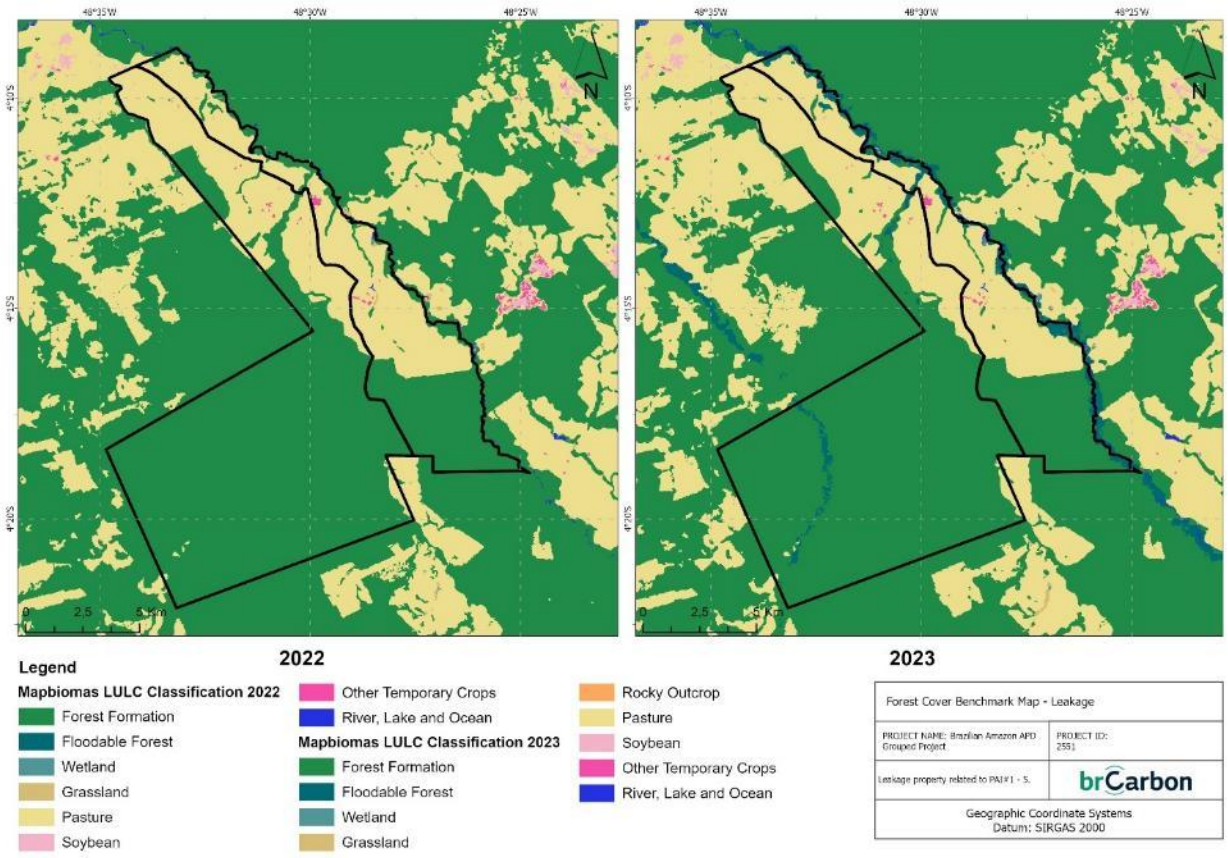


Figure 80. Leakage Property related to PAI#1 to PAI#5.

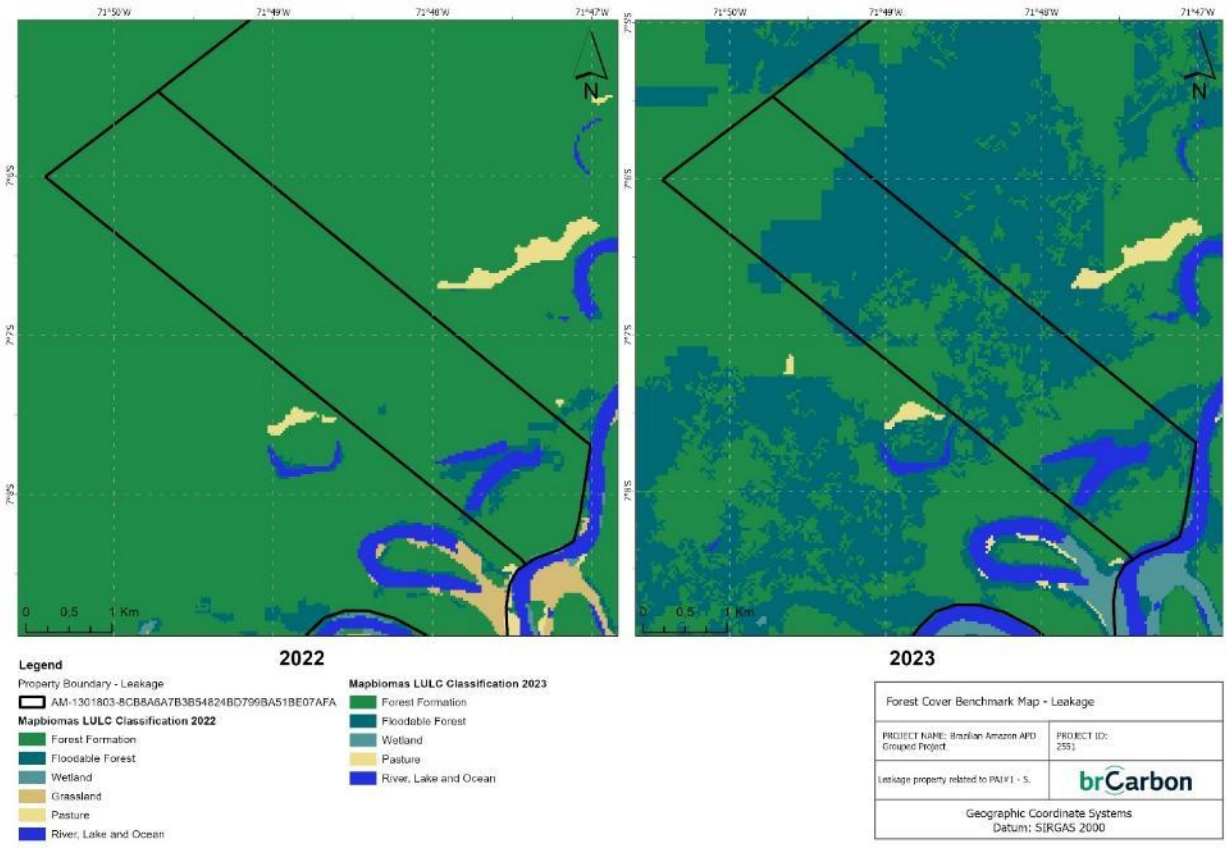


Figure 81. Leakage Property related to PAI#1 to PAI#5.

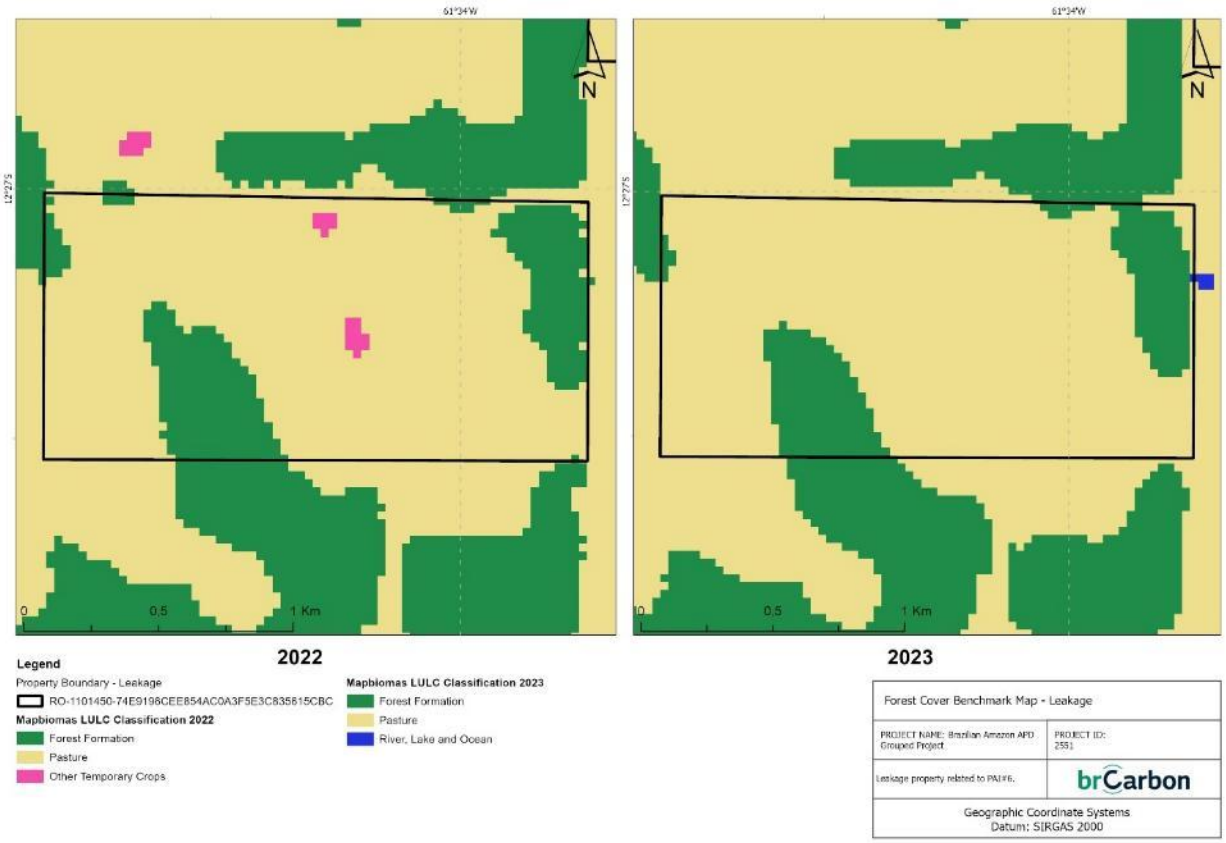


Figure 82. Leakage Property related to PAI#6.

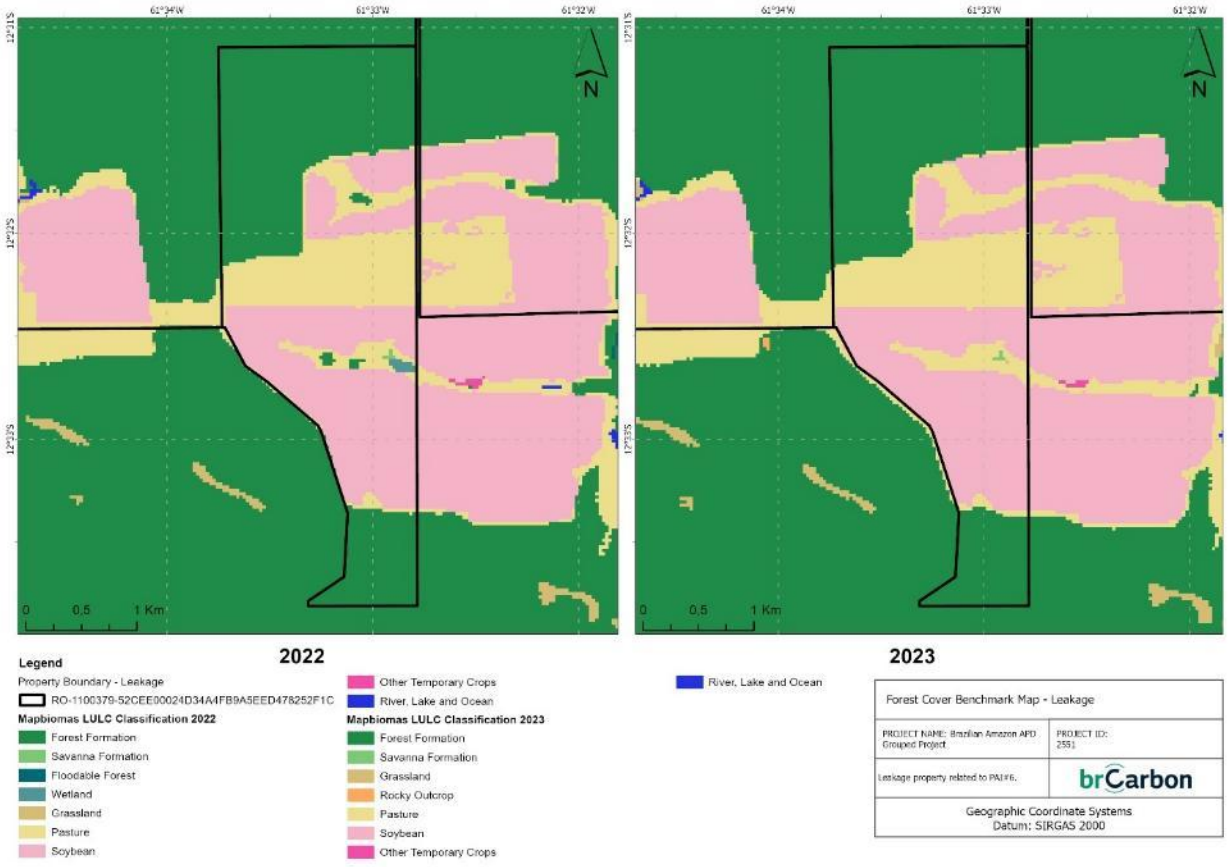


Figure 83. Leakage Property related to PAI#6.

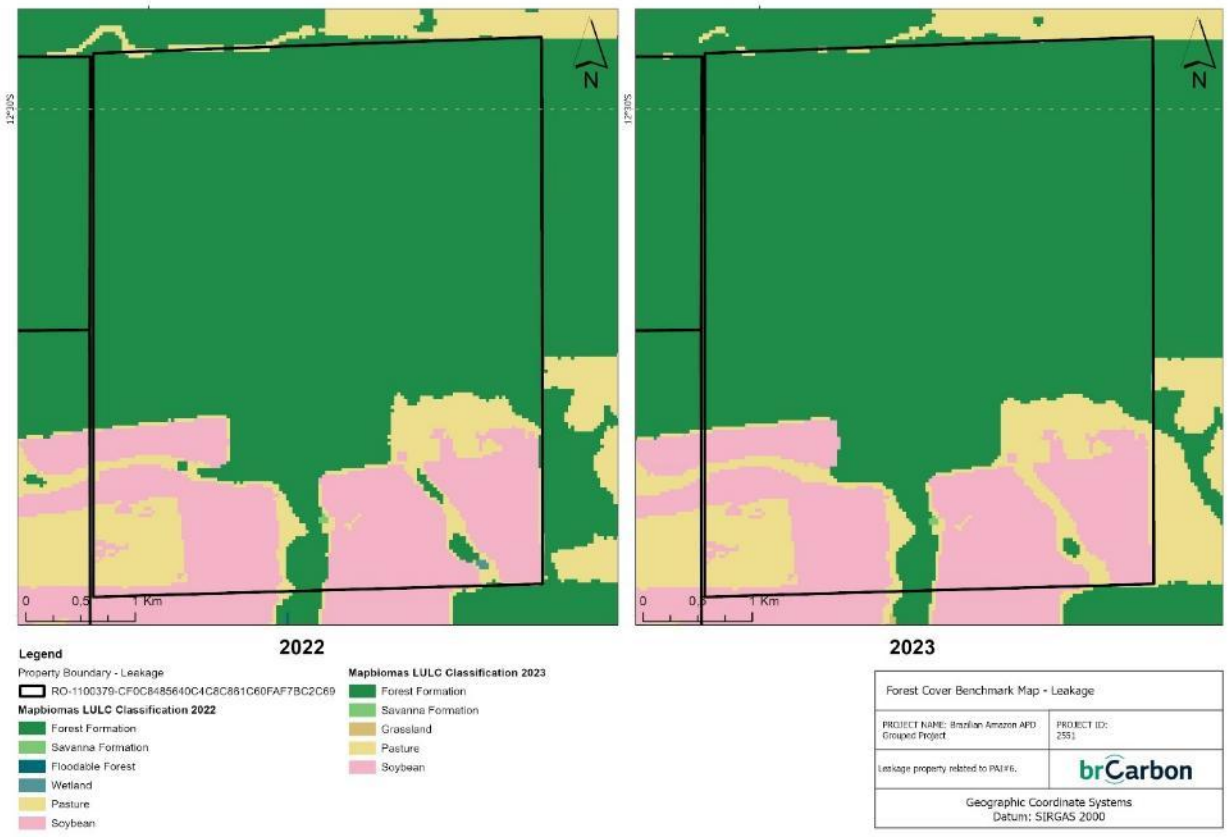


Figure 84. Leakage Property related to PAI#6.

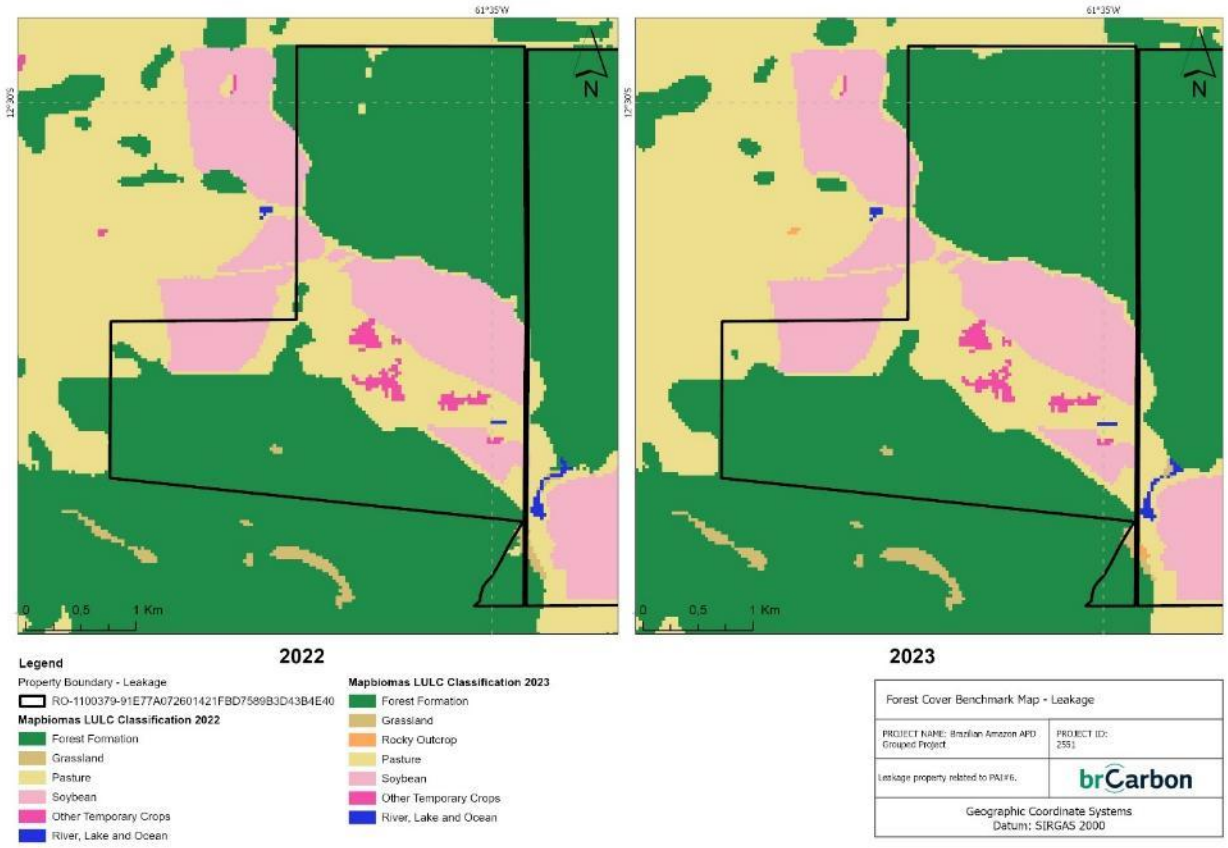


Figure 85. Leakage Property related to PAI#6.

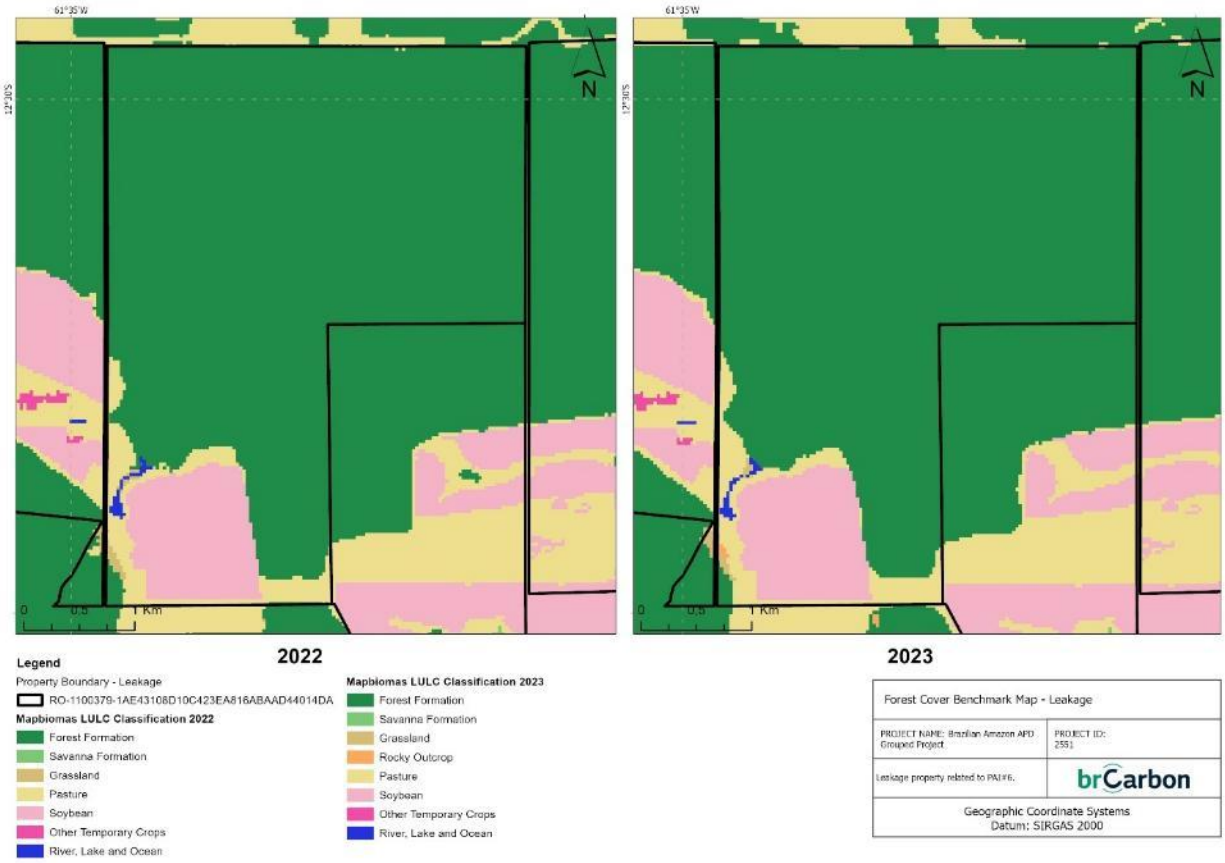


Figure 86. Leakage Property related to PAI#6.



Figure 87. Leakage Property related to PAI#6.

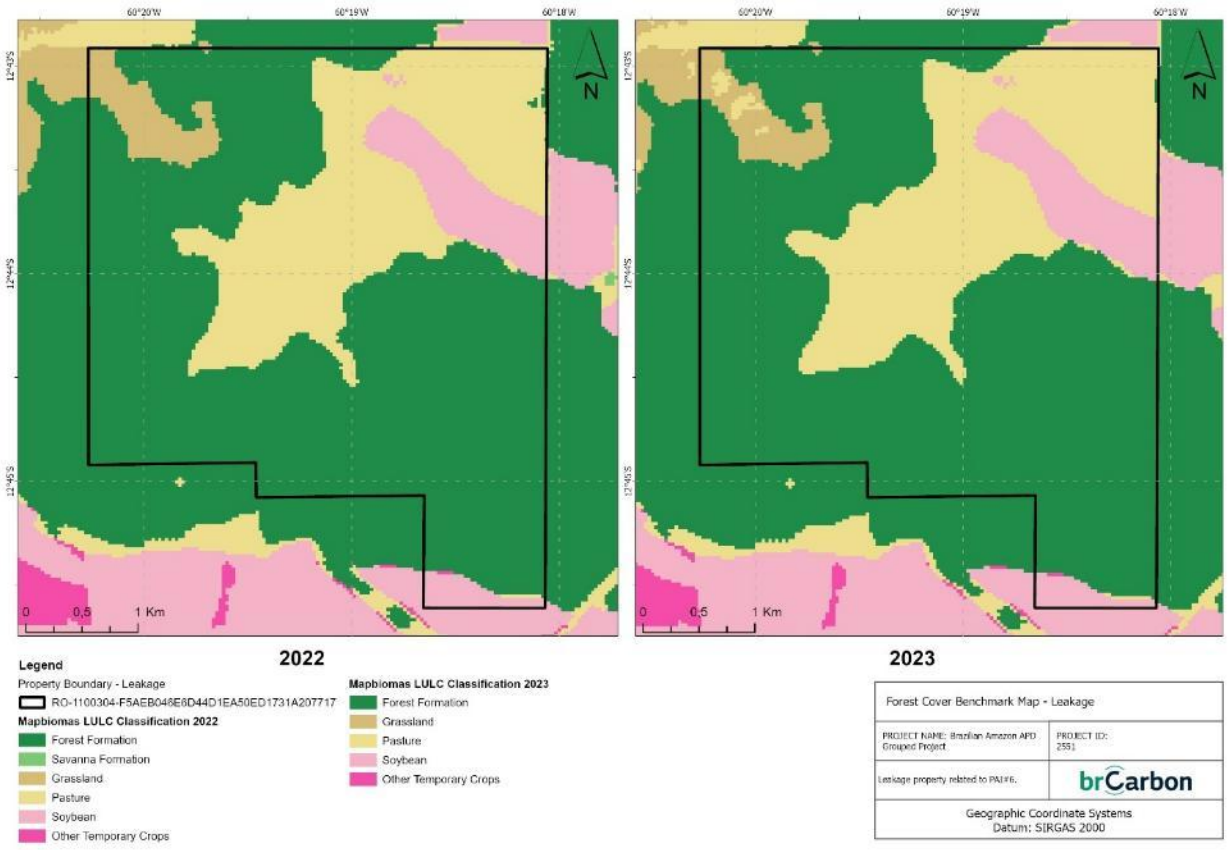


Figure 88. Leakage Property related to PAI#6.

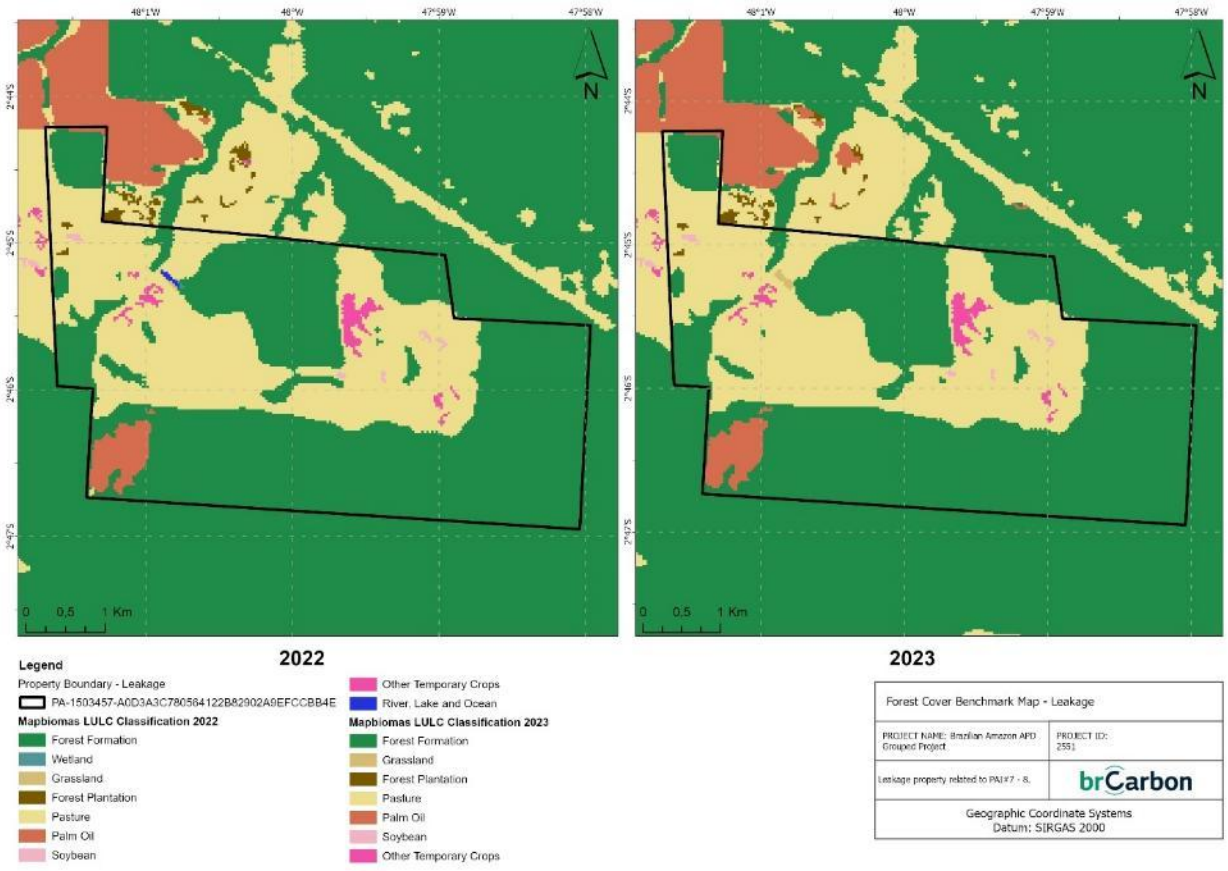


Figure 89. Leakage Property related to PAI#7 and PAI#8.

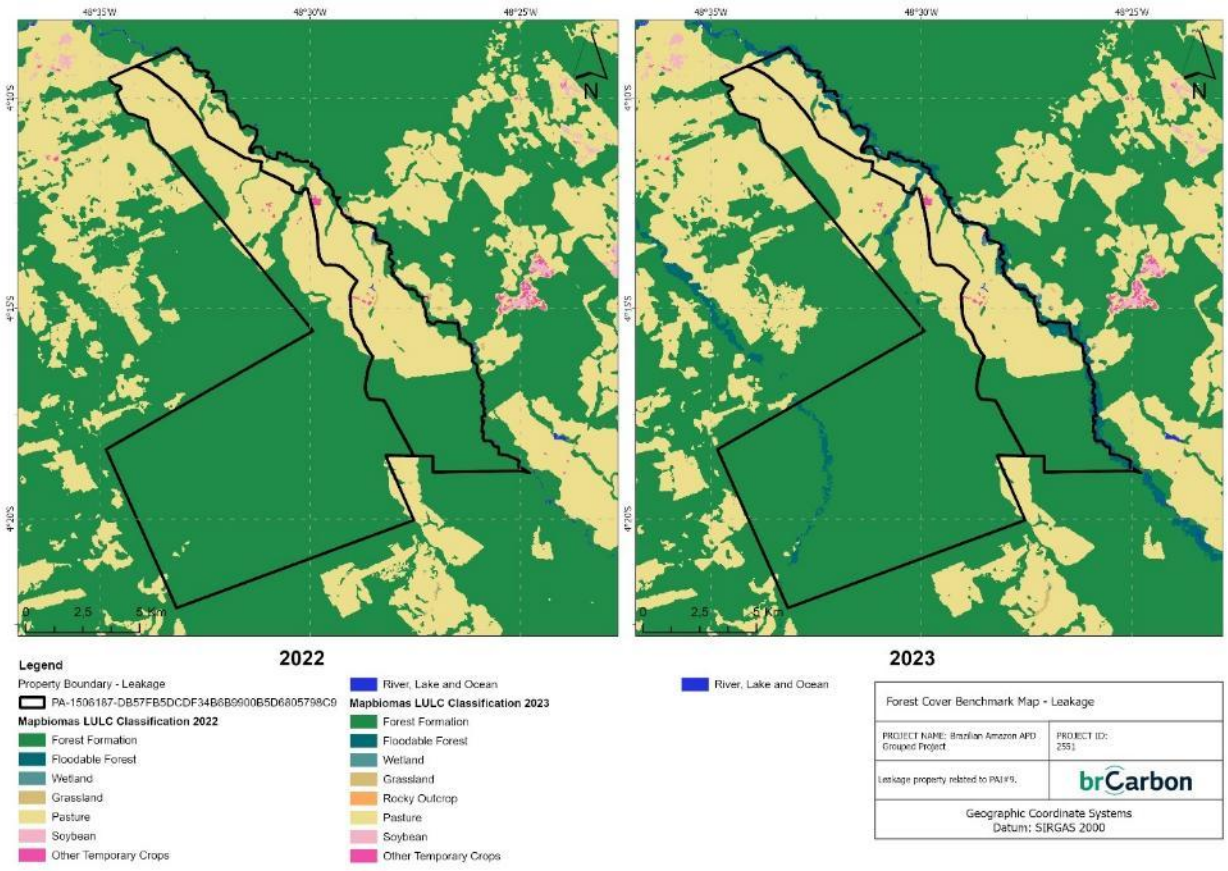


Figure 90. Leakage Property related to PAI#9.

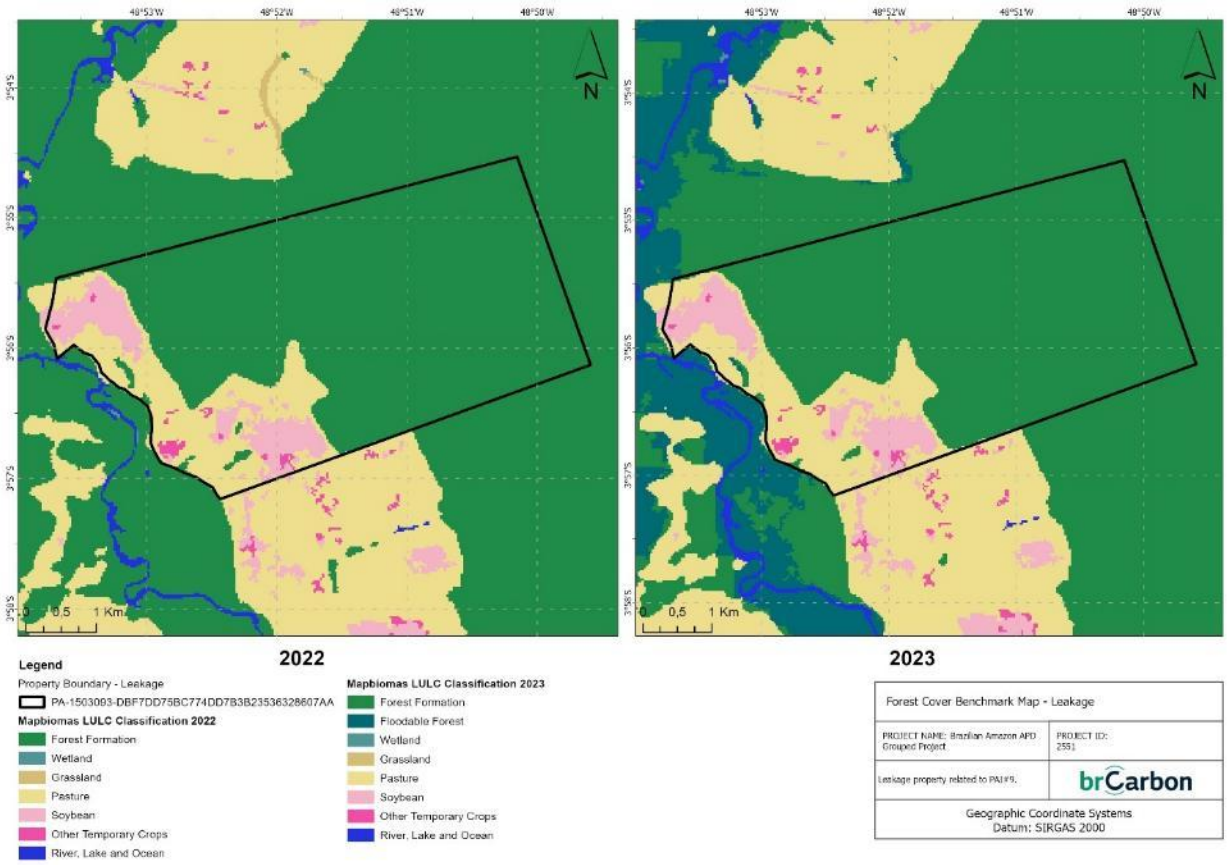


Figure 91. Leakage Property related to PAI#9.

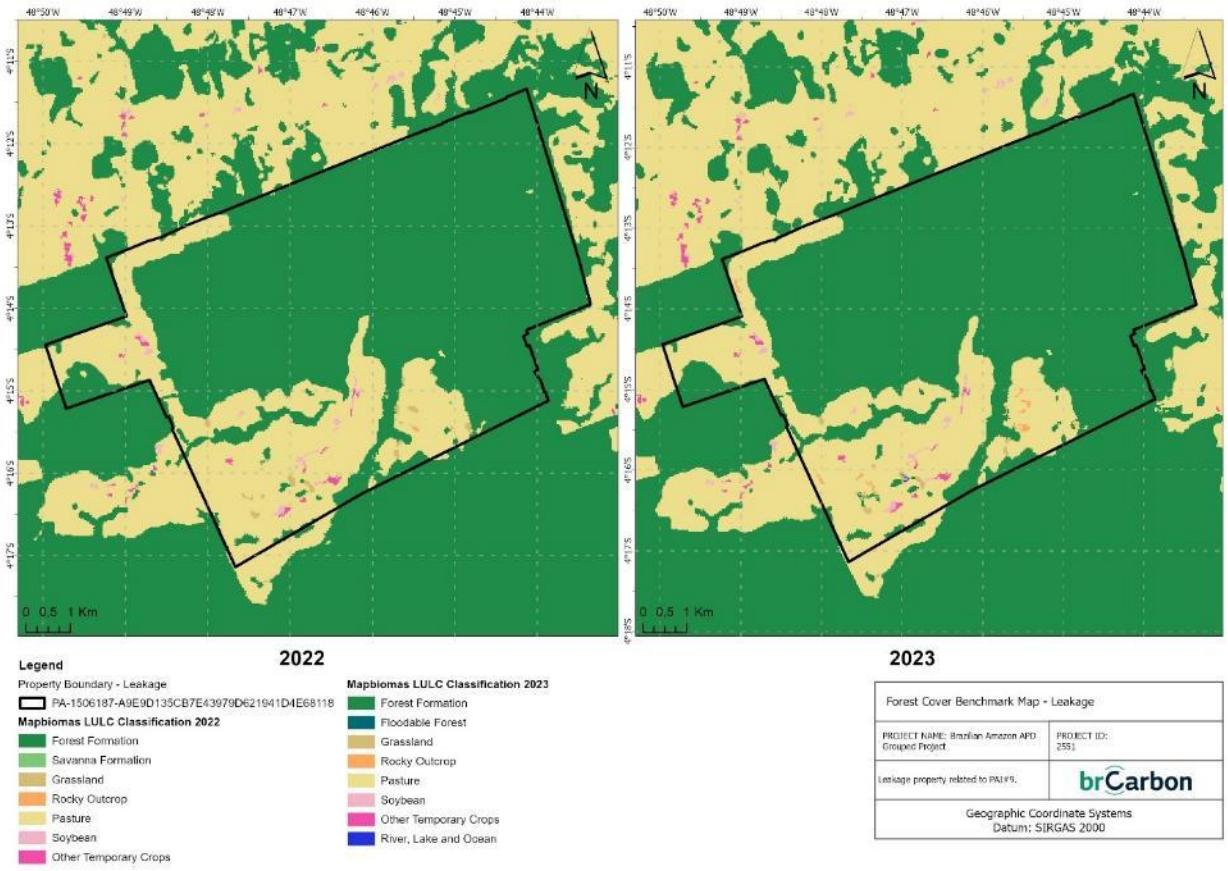


Figure 92. Leakage Property related to PAI#9.

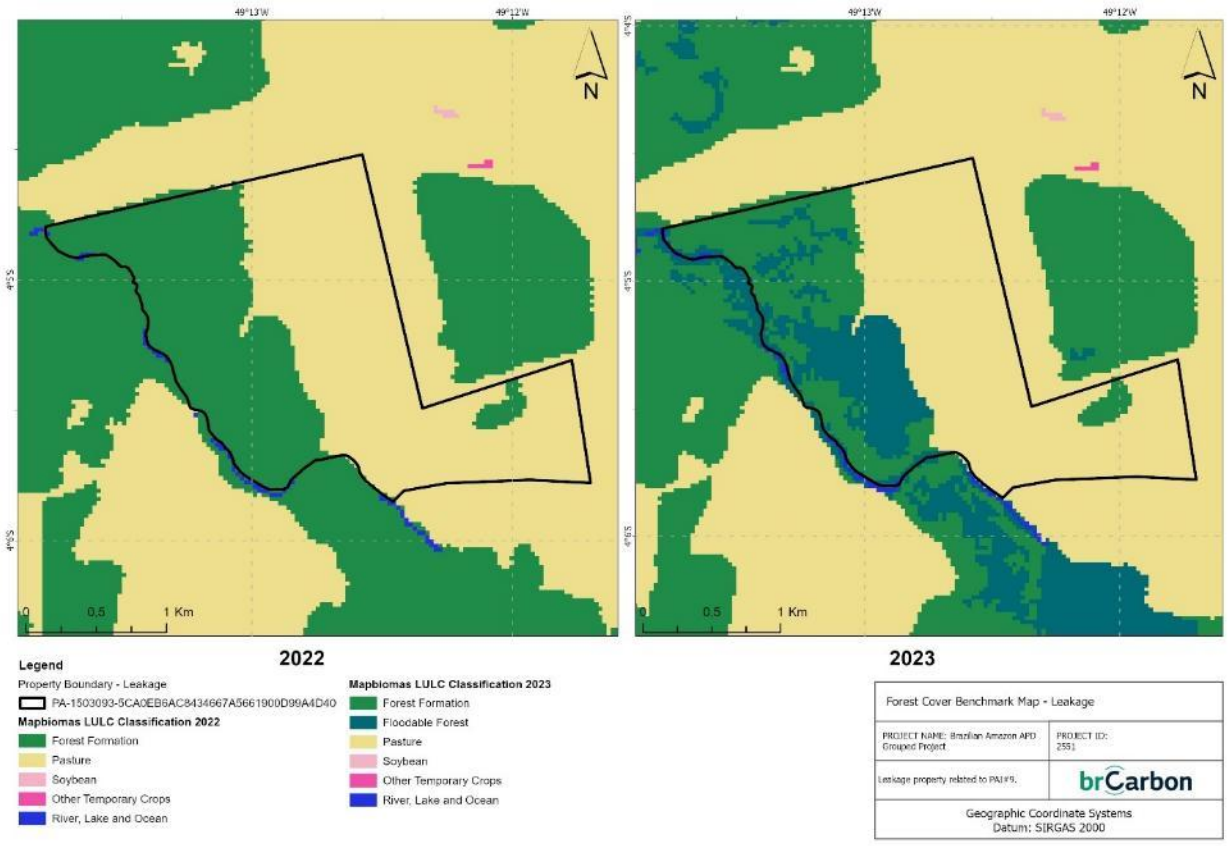


Figure 93. Leakage Property related to PAI#9.

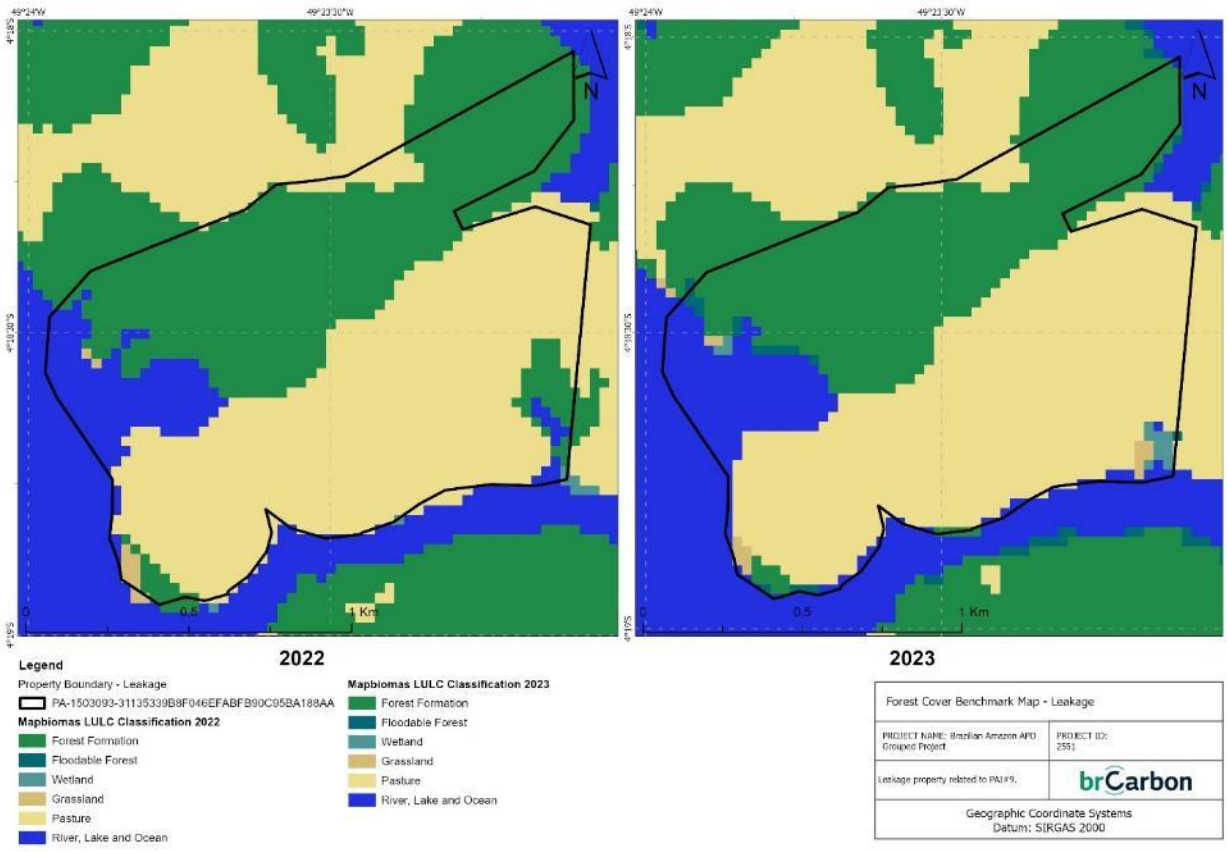


Figure 94. Leakage Property related to PAI#9.

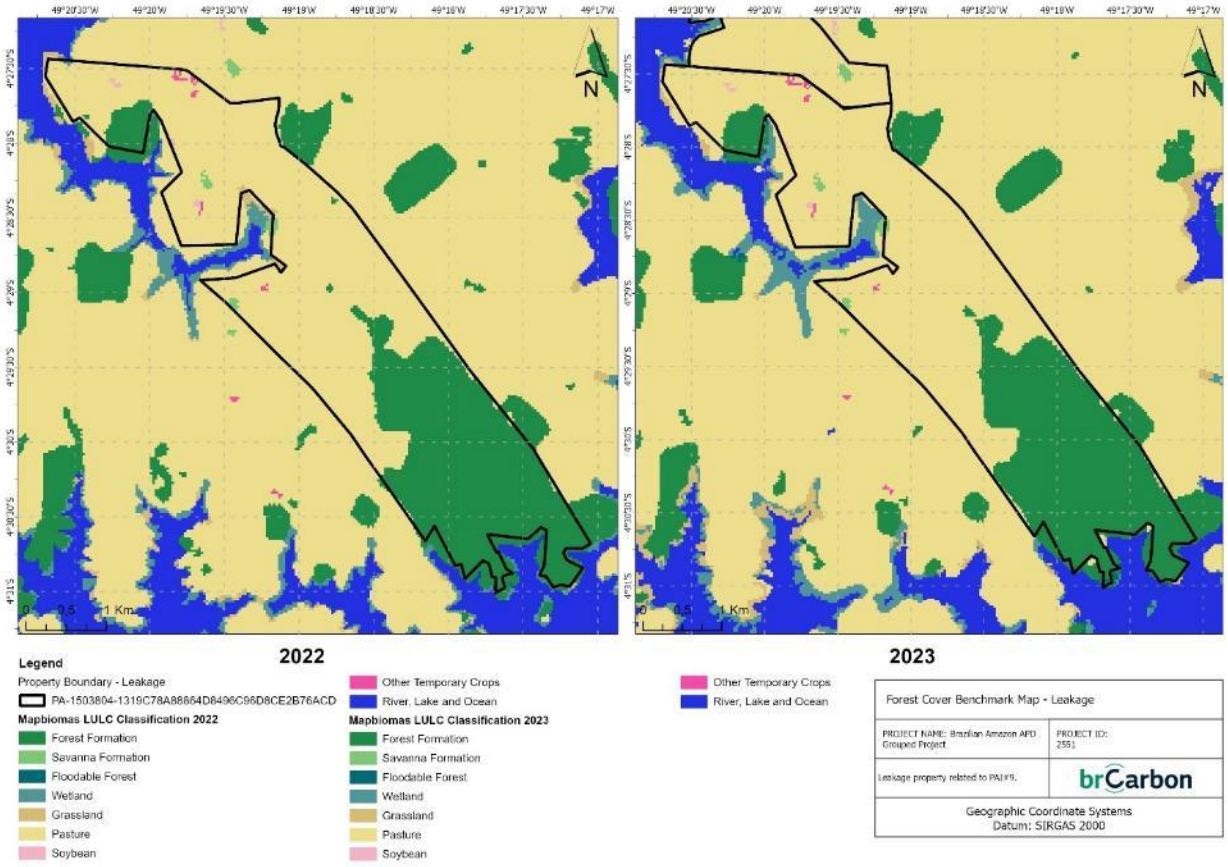


Figure 95. Leakage Property related to PAI#9.

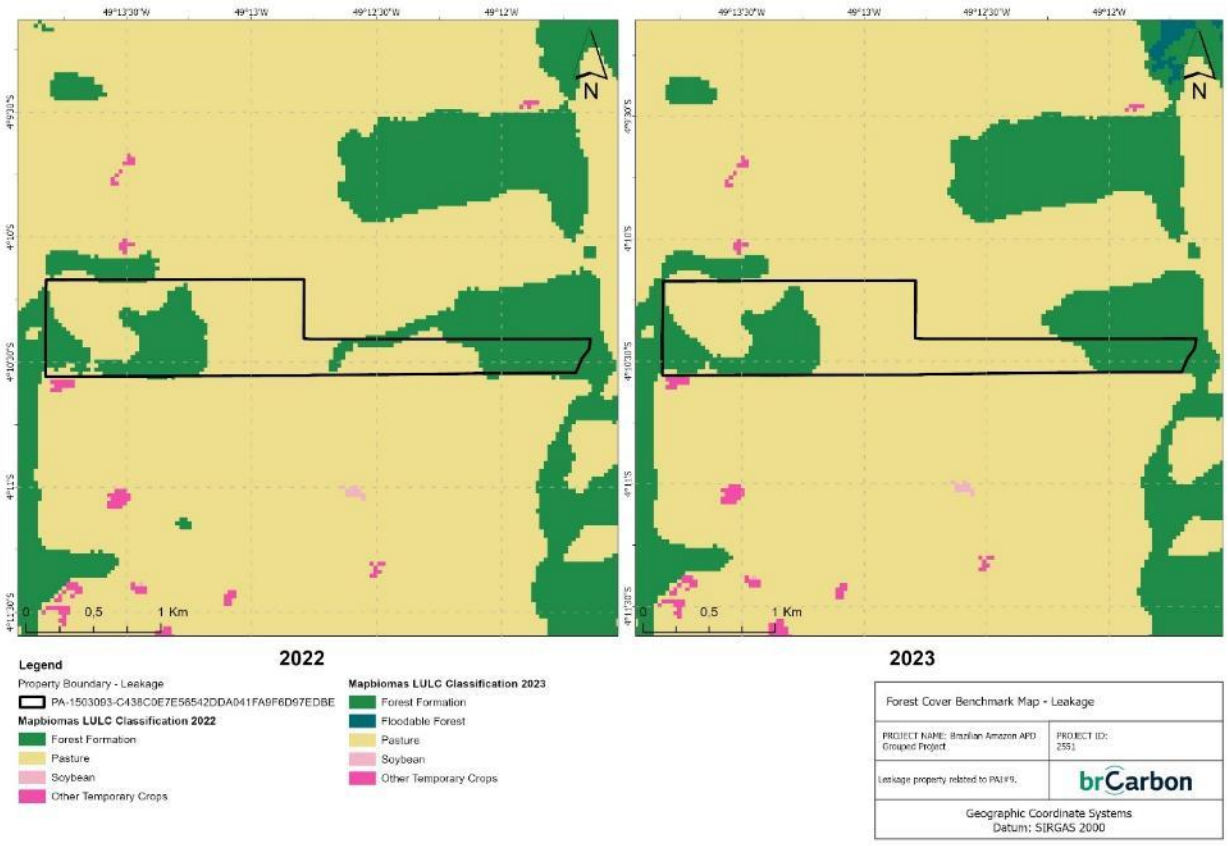


Figure 96. Leakage Property related to PAI#9.

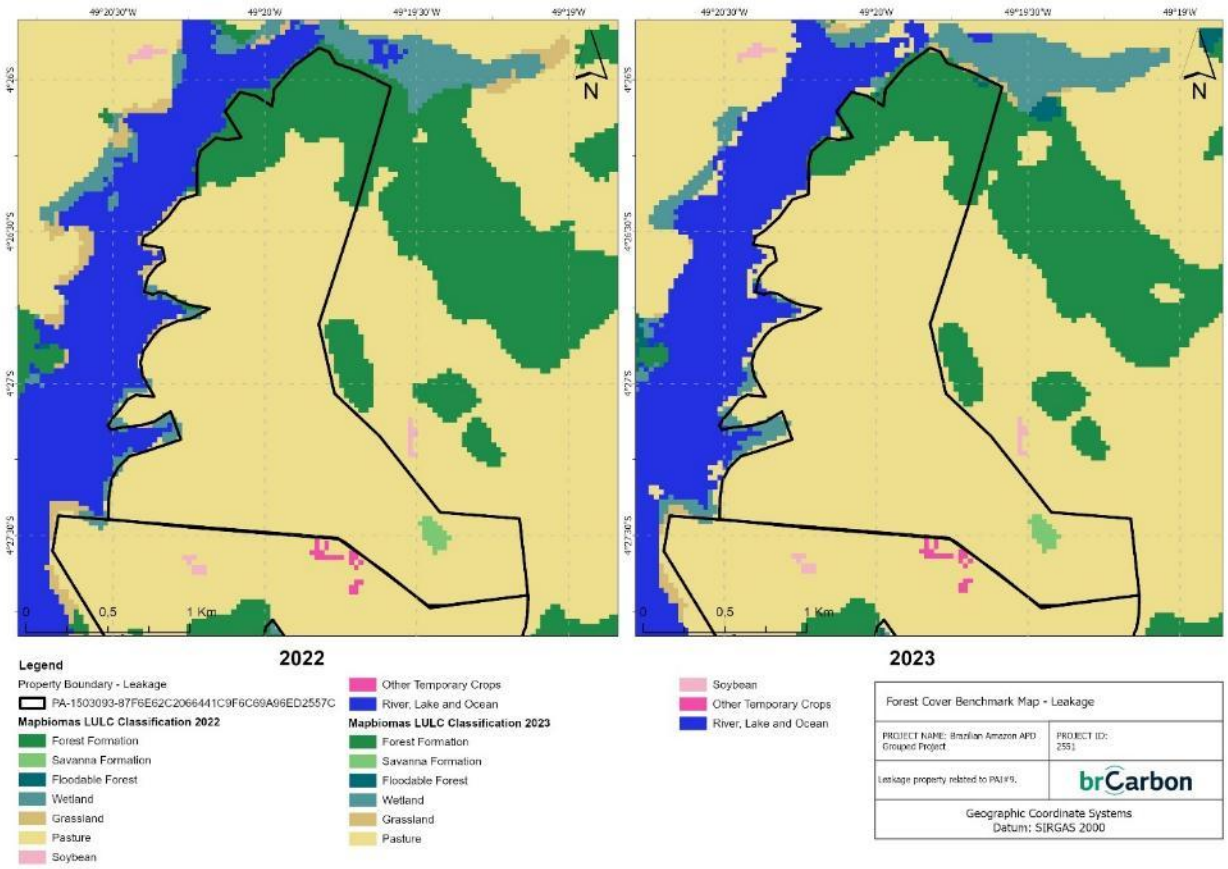


Figure 97. Leakage Property related to PAI#9.



Figure 98. Leakage Property related to PAI#10 to PAI#15.



Figure 99. Leakage Property related to PAI#10 to PAI#15.

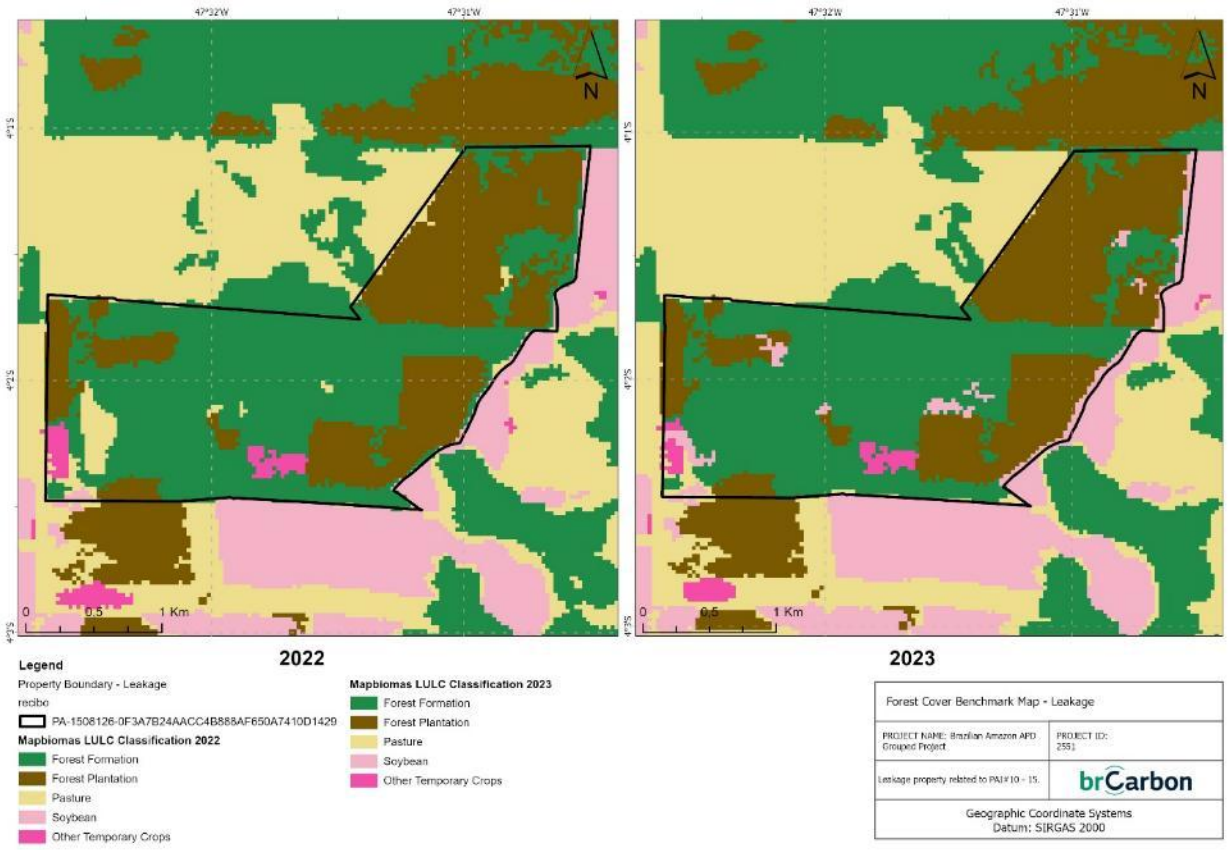


Figure 100. Leakage Property related to PAI#10 to PAI#15.

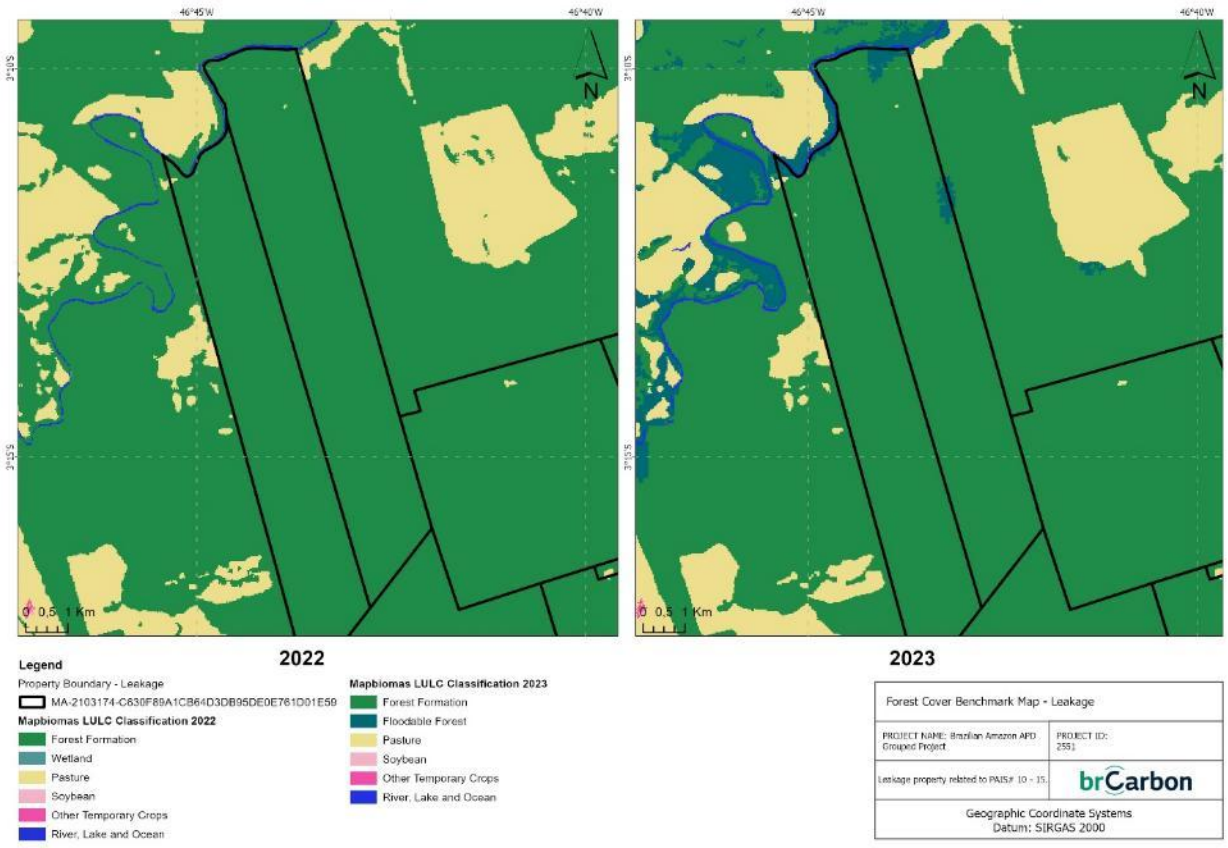


Figure 101. Leakage Property related to PAI#10 to PAI#15.

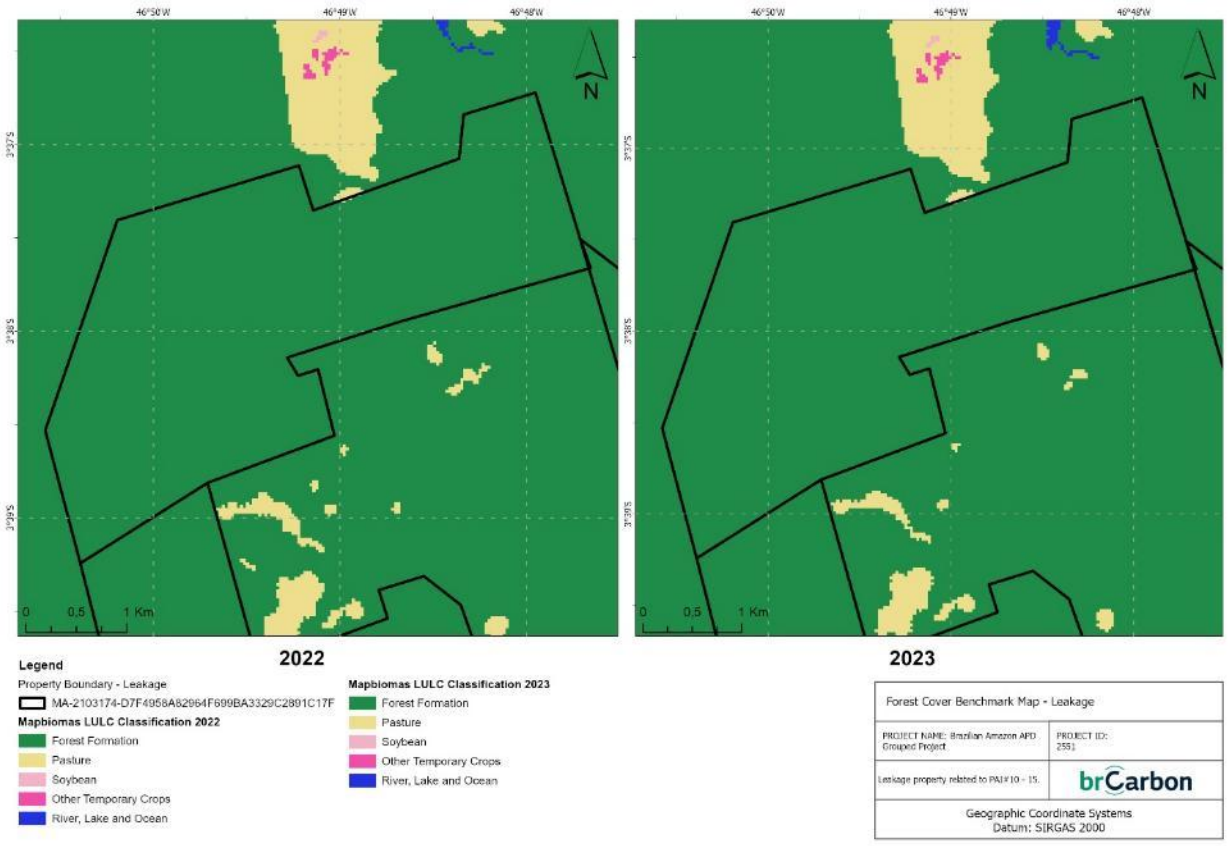


Figure 102. Leakage Property related to PAI#10 to PAI#15.



Figure 103. Leakage Property related to PAI#10 to PAI#15.



Figure 104. Leakage Property related to PAI#10 to PAI#15.

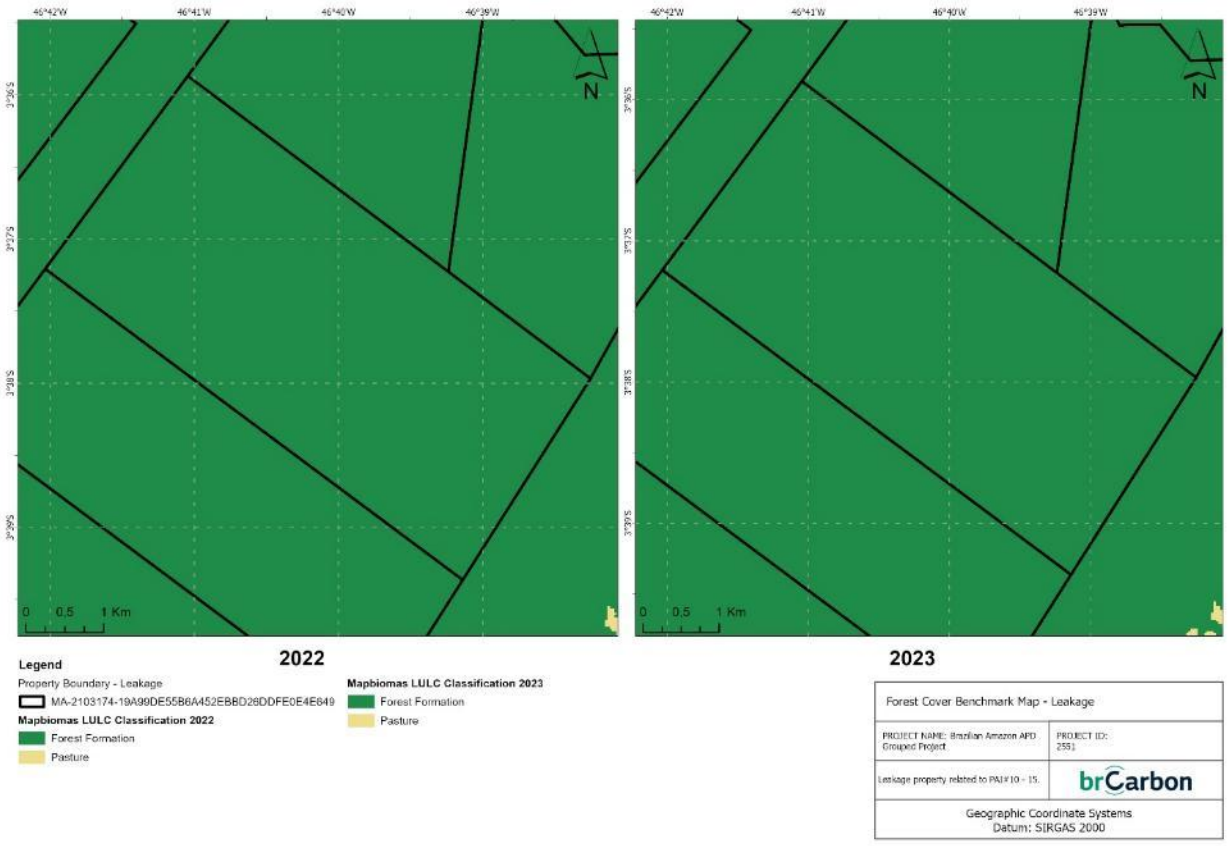


Figure 105. Leakage Property related to PAI#10 to PAI#15.

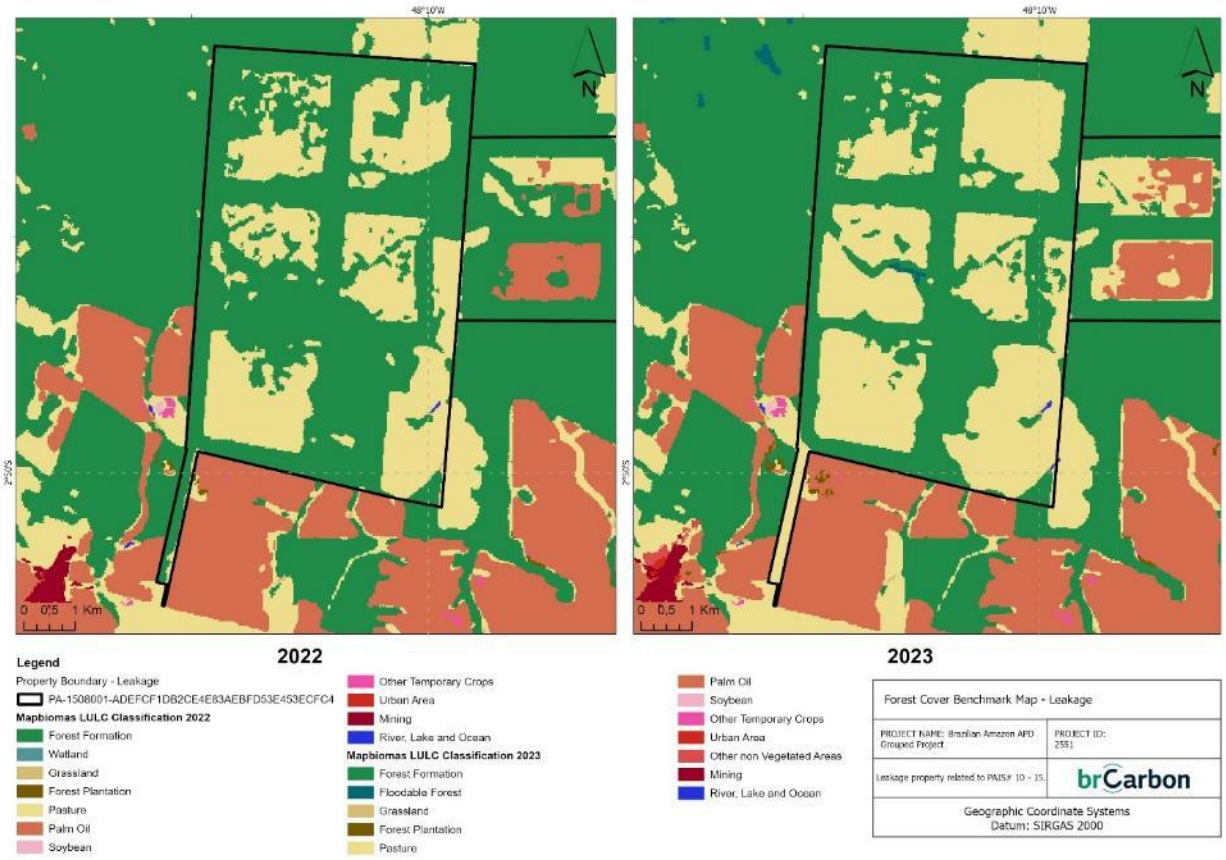


Figure 106. Leakage Property related to PAI#10 to PAI#15.



Figure 107. Leakage Property related to PAI#10 to PAI#15.



Figure 108. Leakage Property related to PAI#10 to PAI#15.

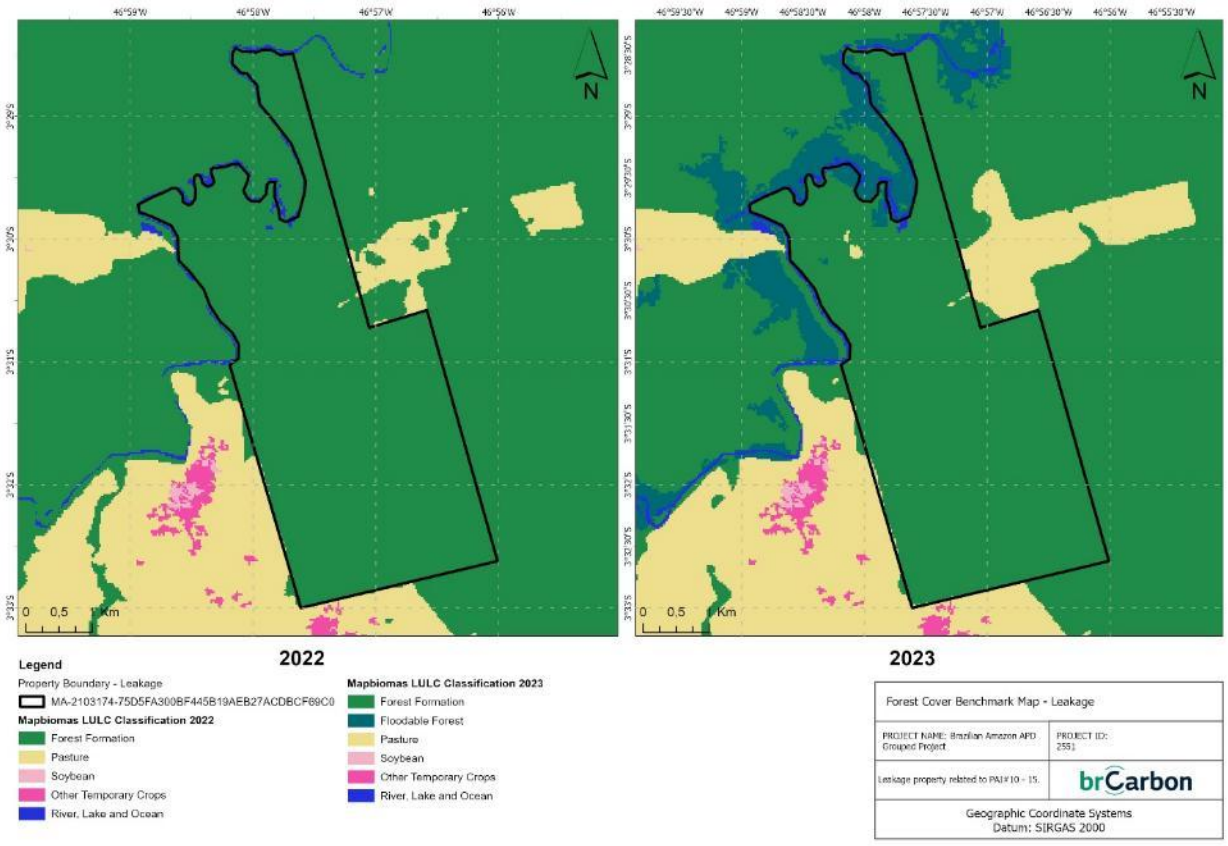


Figure 109. Leakage Property related to PAI#10 to PAI#15.

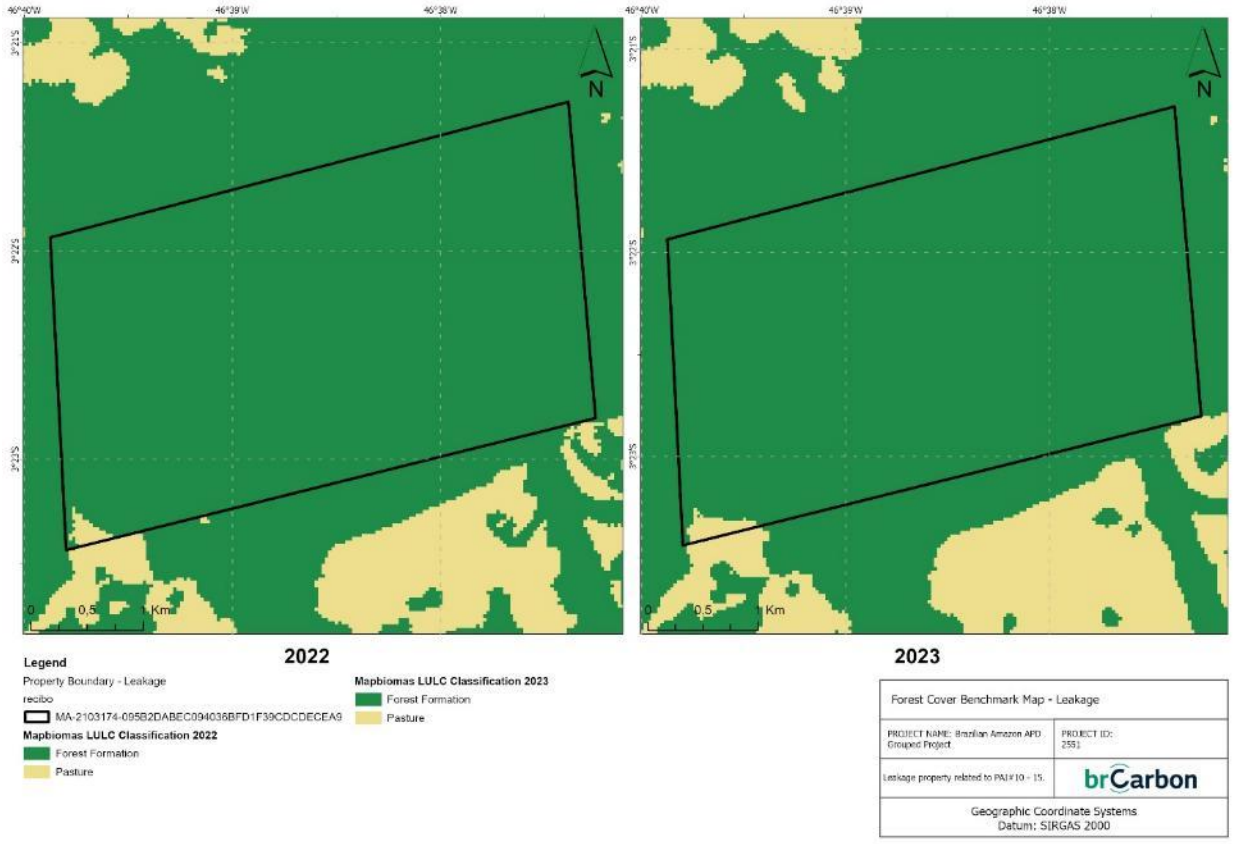


Figure 110. Leakage Property related to PAI#10 to PAI#15.

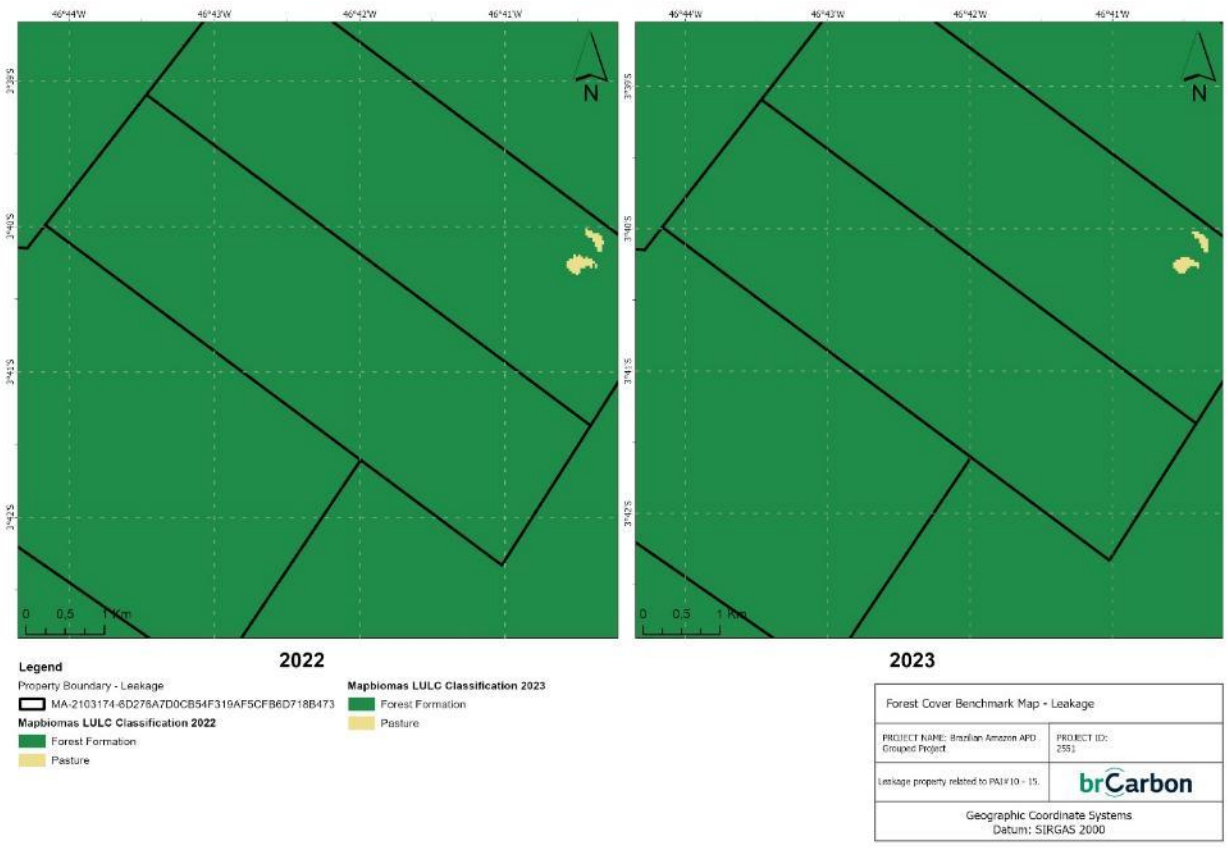


Figure 111. Leakage Property related to PAI#10 to PAI#15.

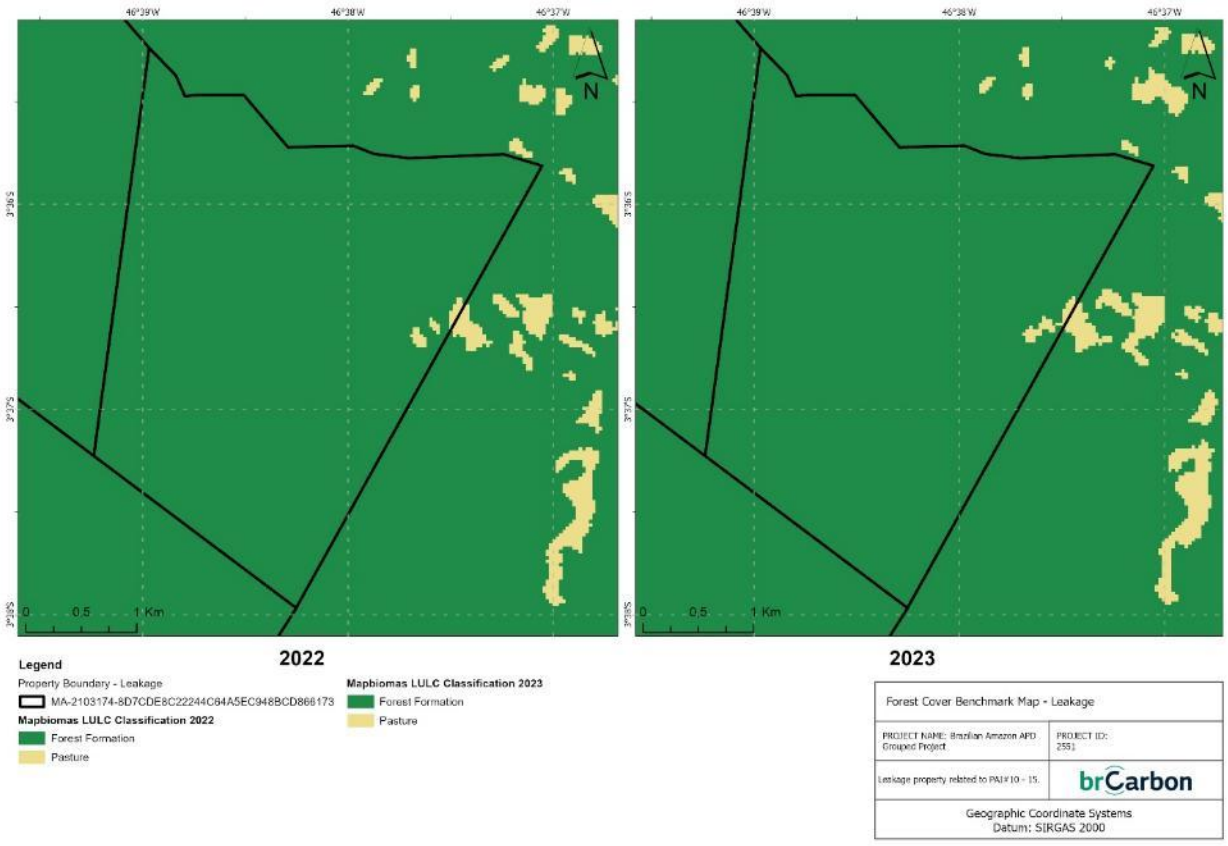


Figure 112. Leakage Property related to PAI#10 to PAI#15.

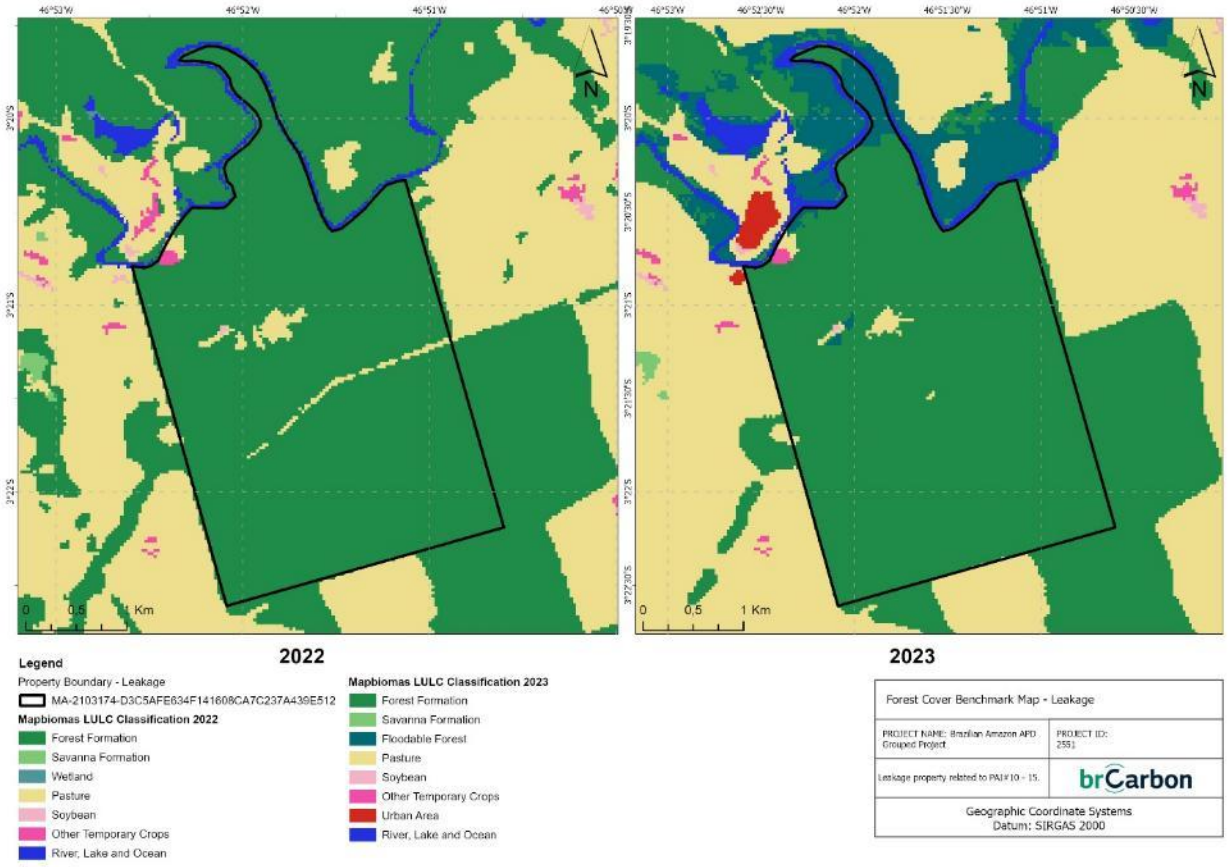


Figure 113. Leakage Property related to PAI#10 to PAI#15.

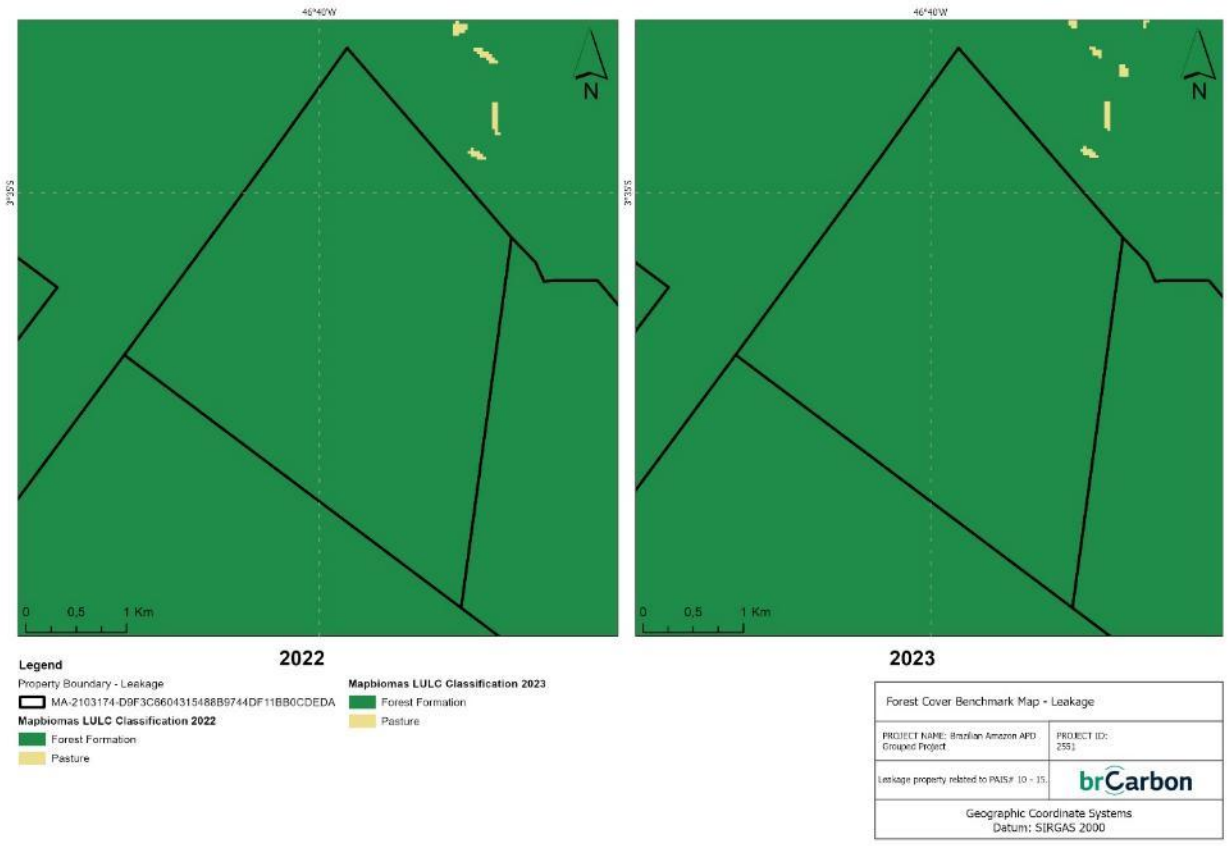


Figure 114. Leakage Property related to PAI#10 to PAI#15.



Figure 115. Leakage Property related to PAI#10 to PAI#15.

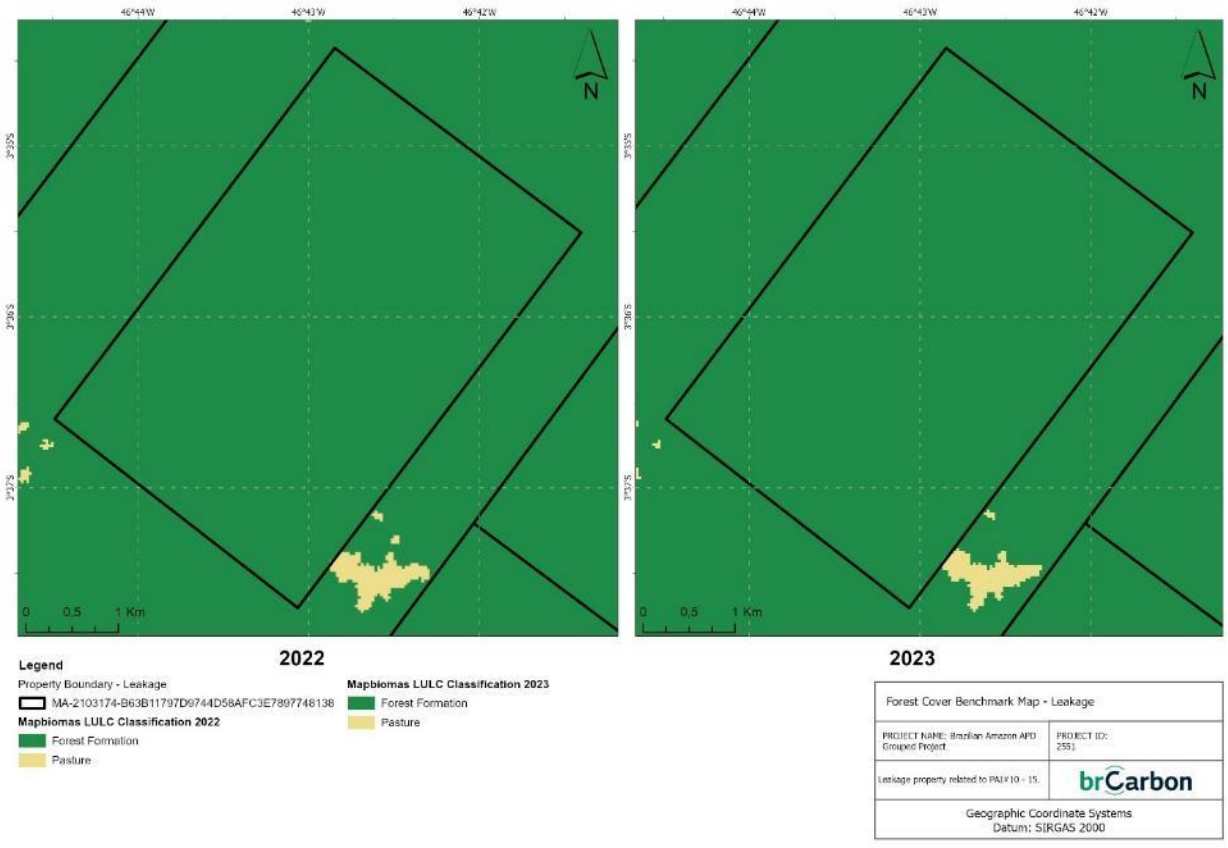


Figure 116. Leakage Property related to PAI#10 to PAI#15.



Figure 117. Leakage Property related to PAI#10 to PAI#15.

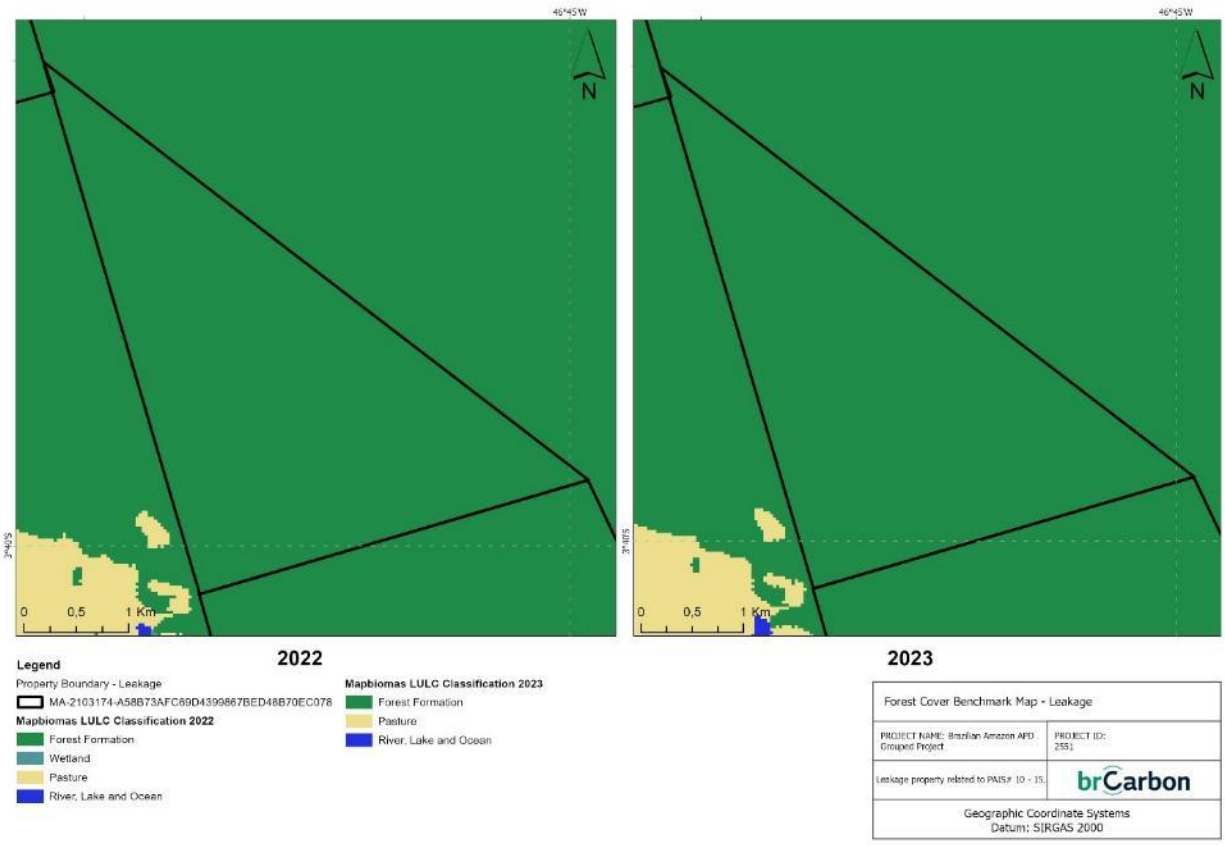


Figure 118. Leakage Property related to PAI#10 to PAI#15.

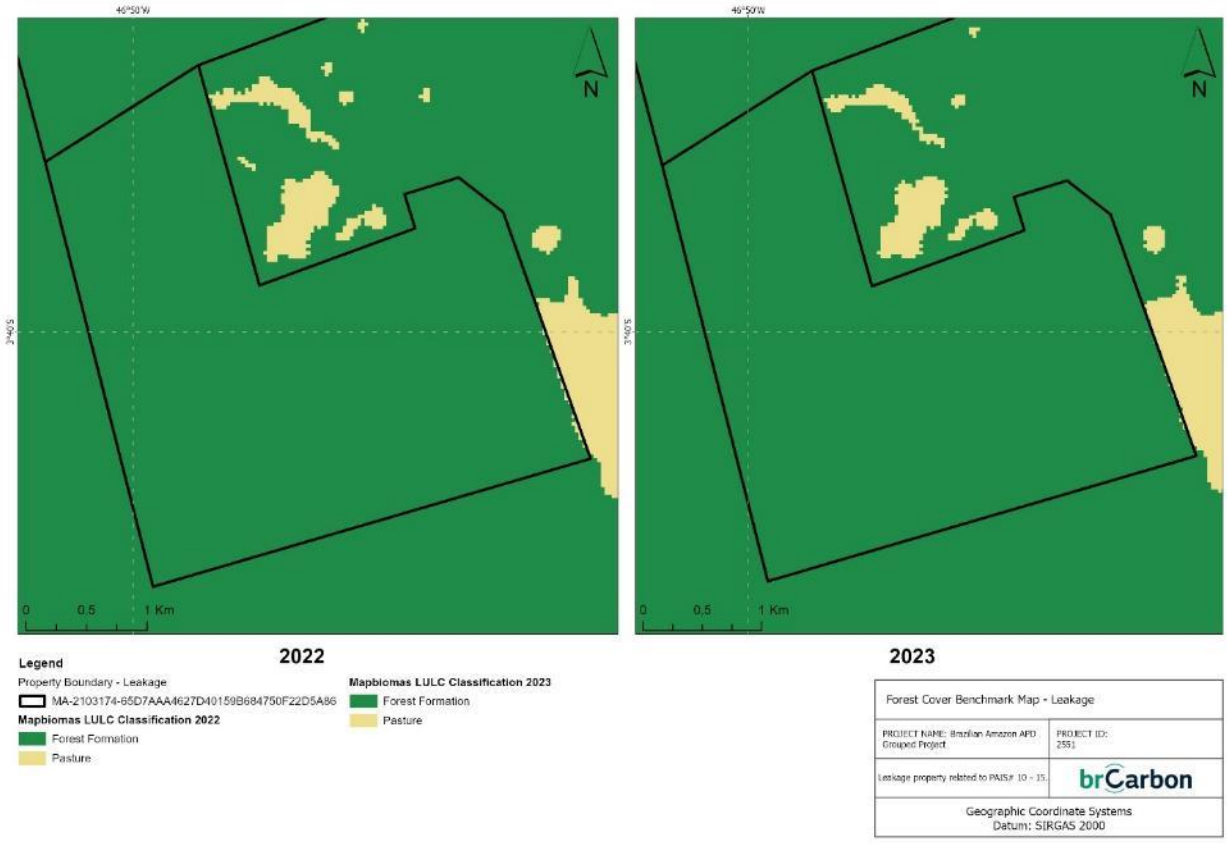


Figure 119 Leakage Property related to PAI#10 to PAI#15.



Figure 120 Leakage Property related to PAI#10 to PAI#15.



Figure 121. Leakage Property related to PAI#10 to PAI#15.

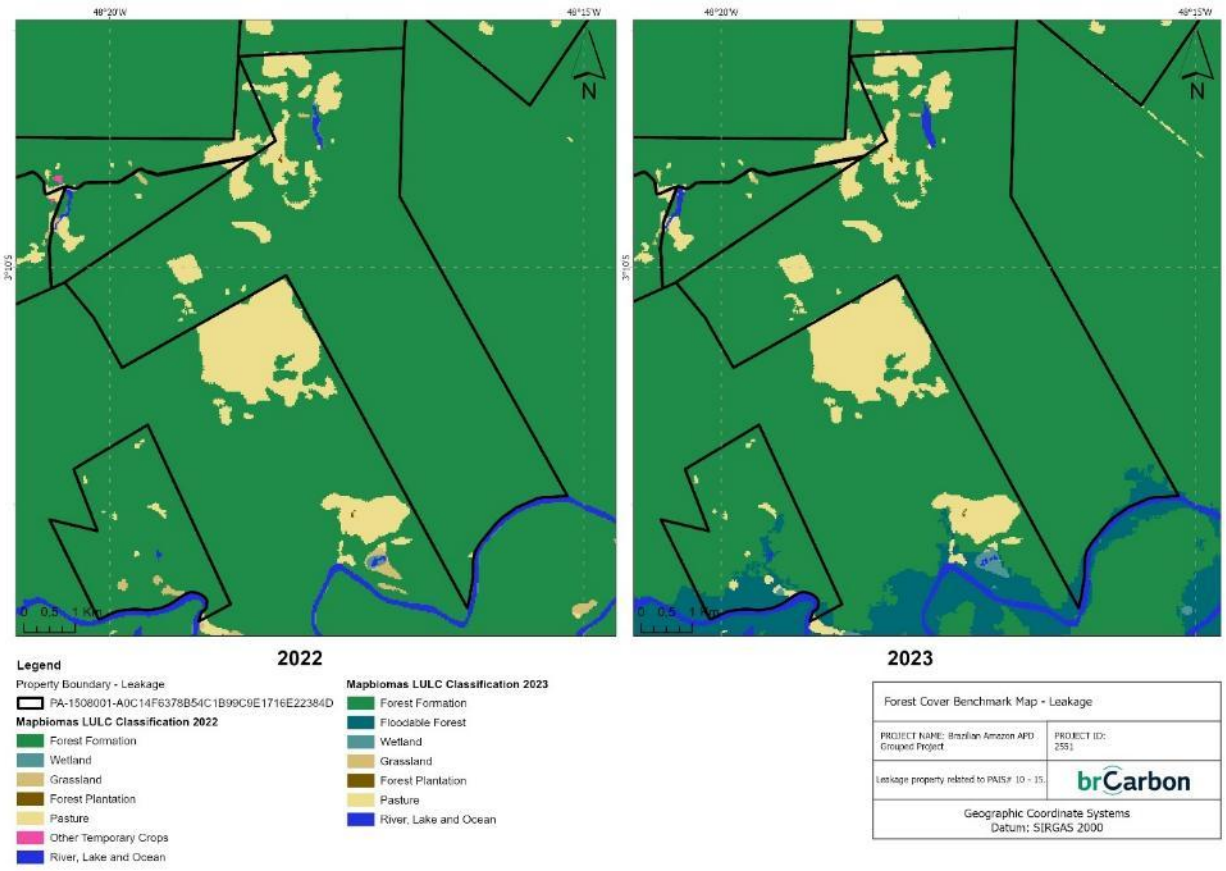


Figure 122. Leakage Property related to PAI#10 to PAI#15.

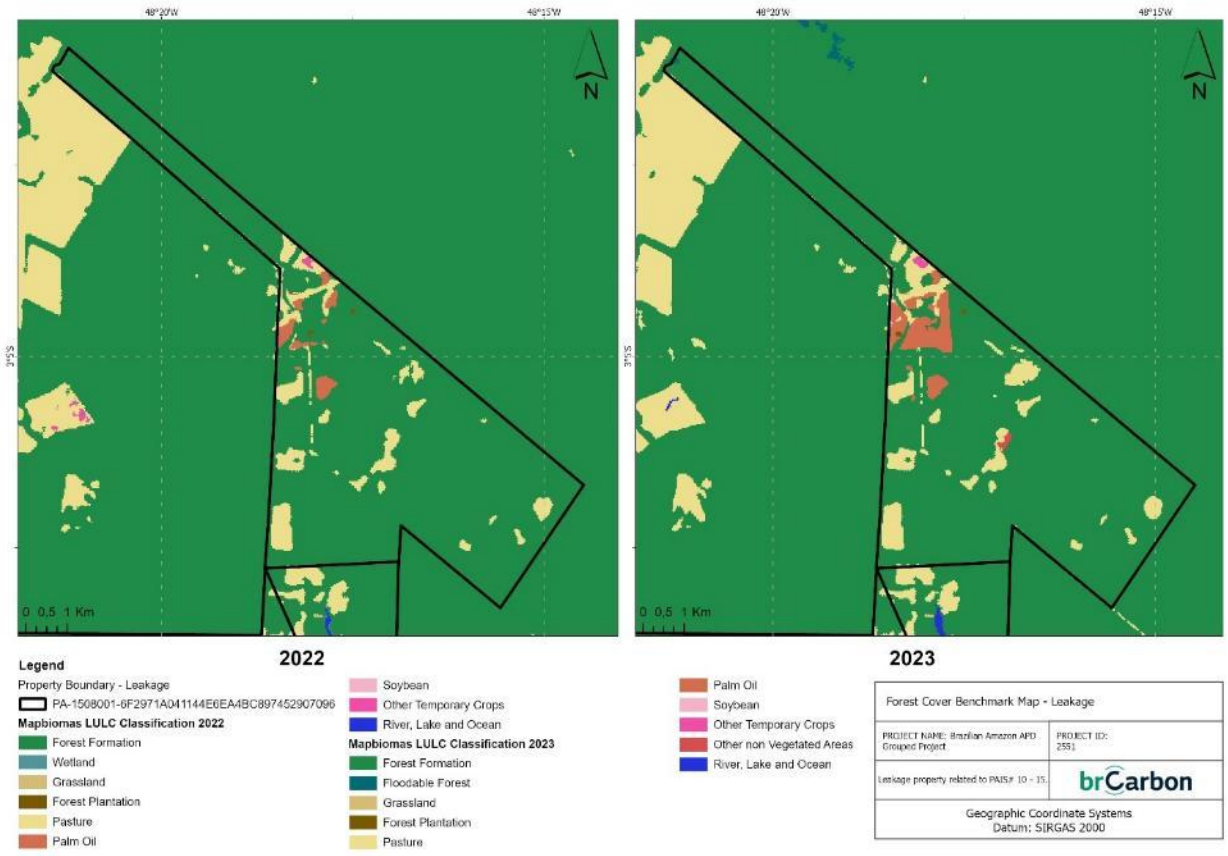


Figure 123. Leakage Property related to PAI#10 to PAI#15.

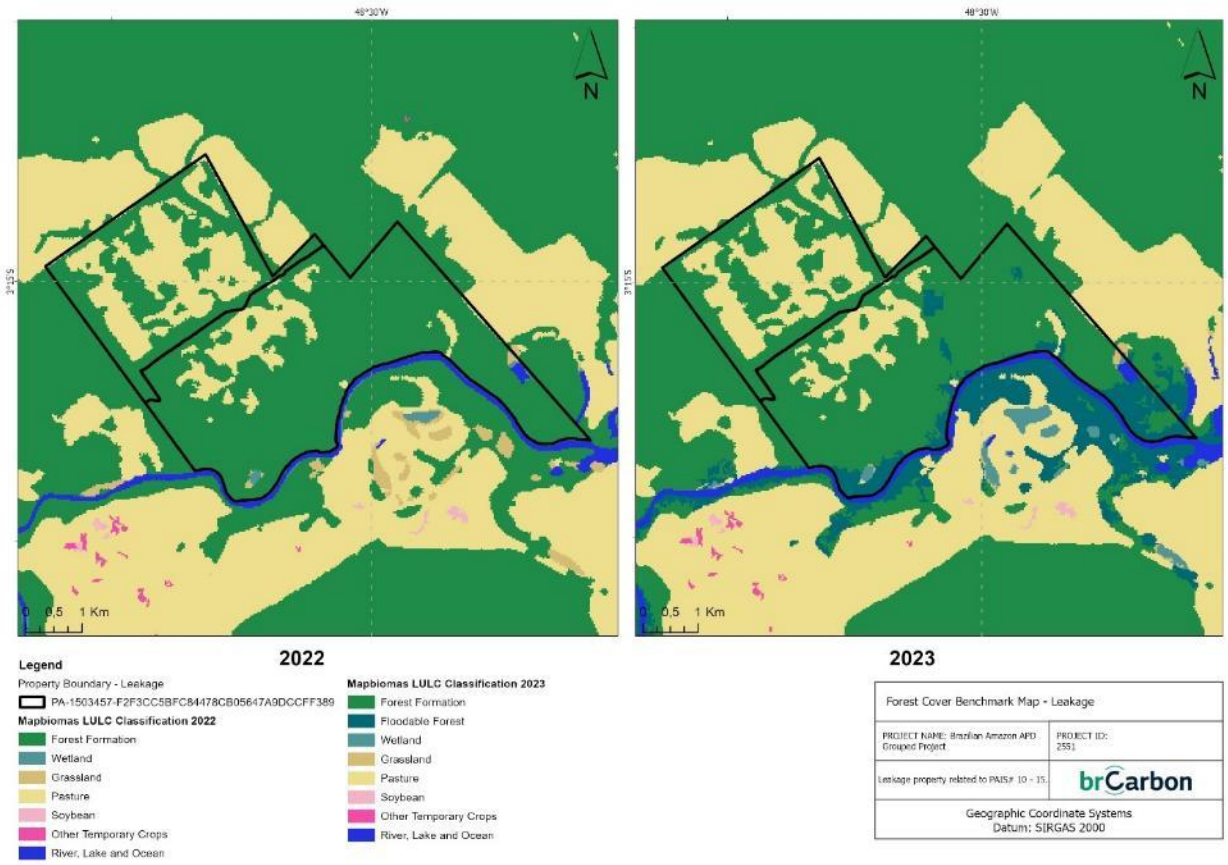


Figure 124. Leakage Property related to PAI#10 to PAI#15.

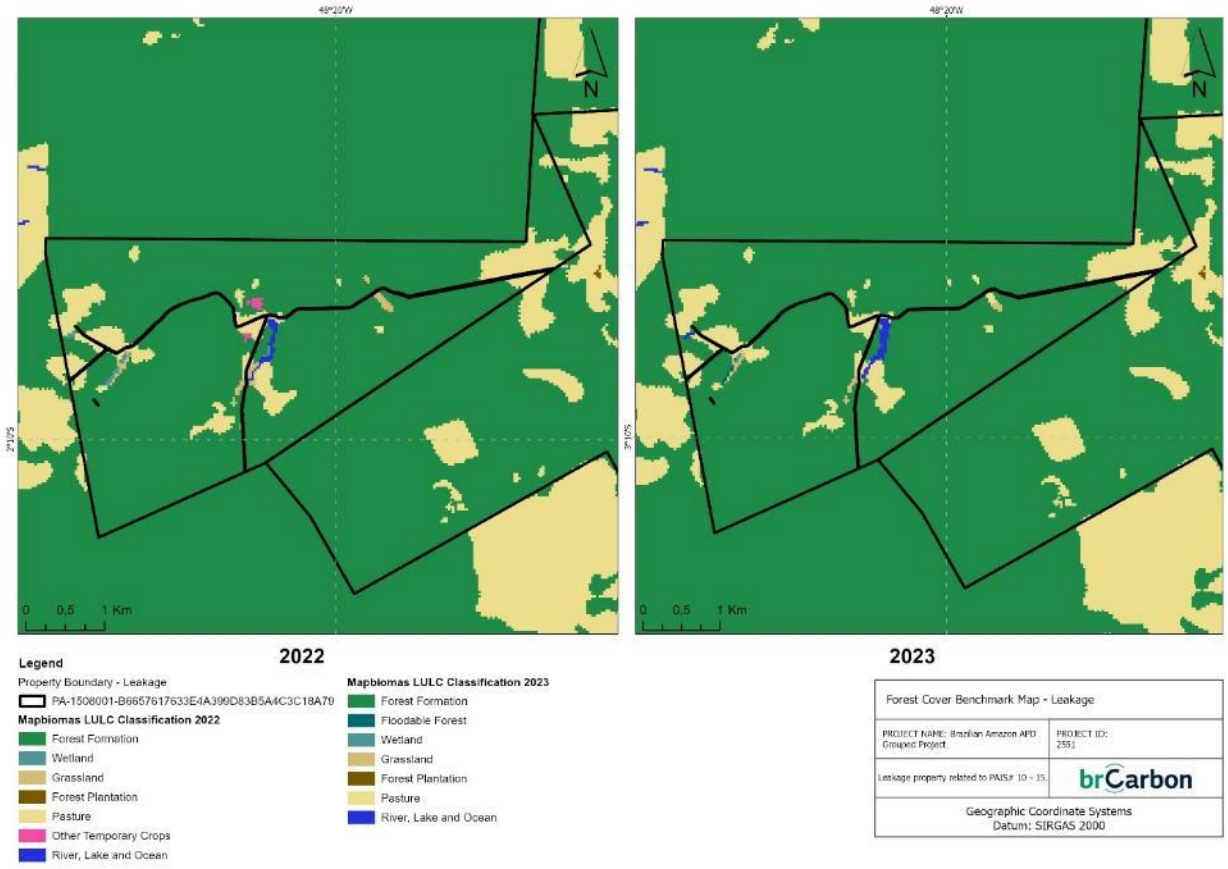


Figure 125. Leakage Property related to PAI#10 to PAI#15.

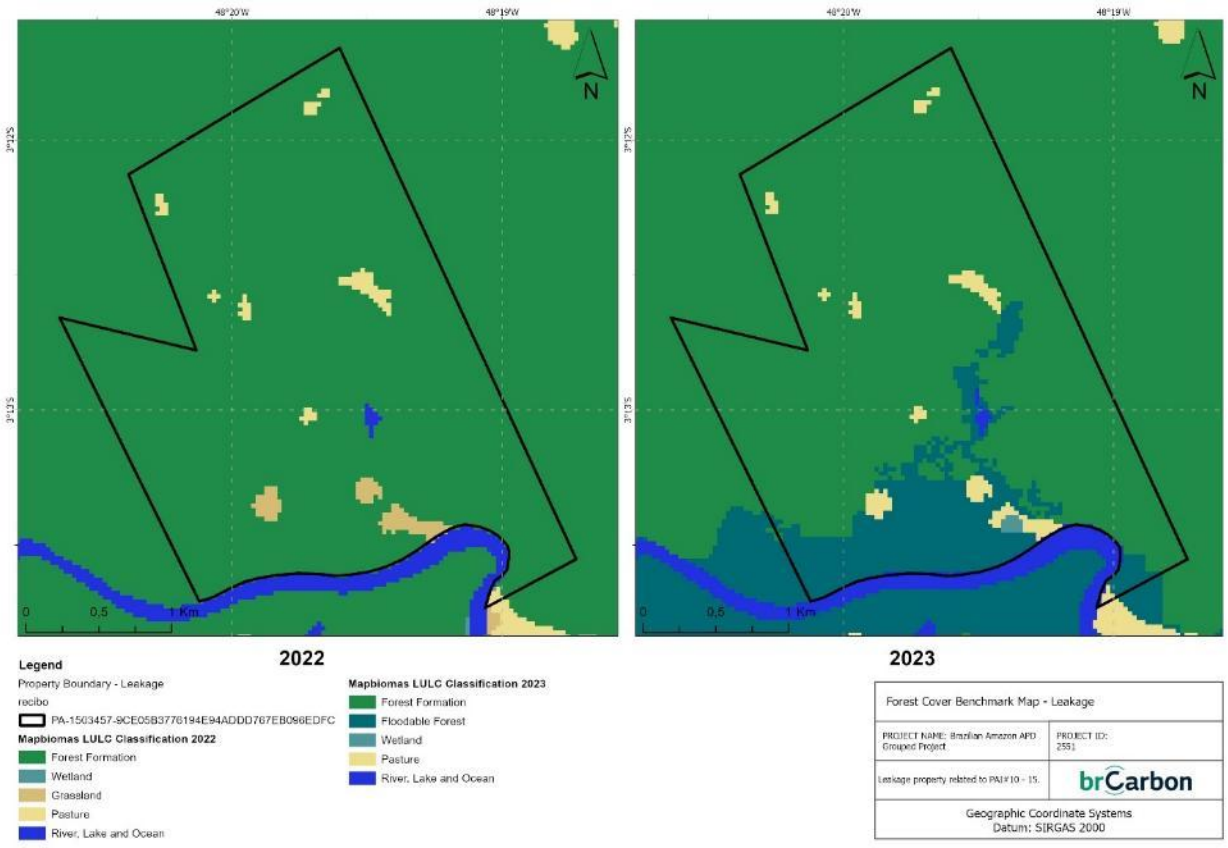


Figure 126. Leakage Property related to PAI#10 to PAI#15.

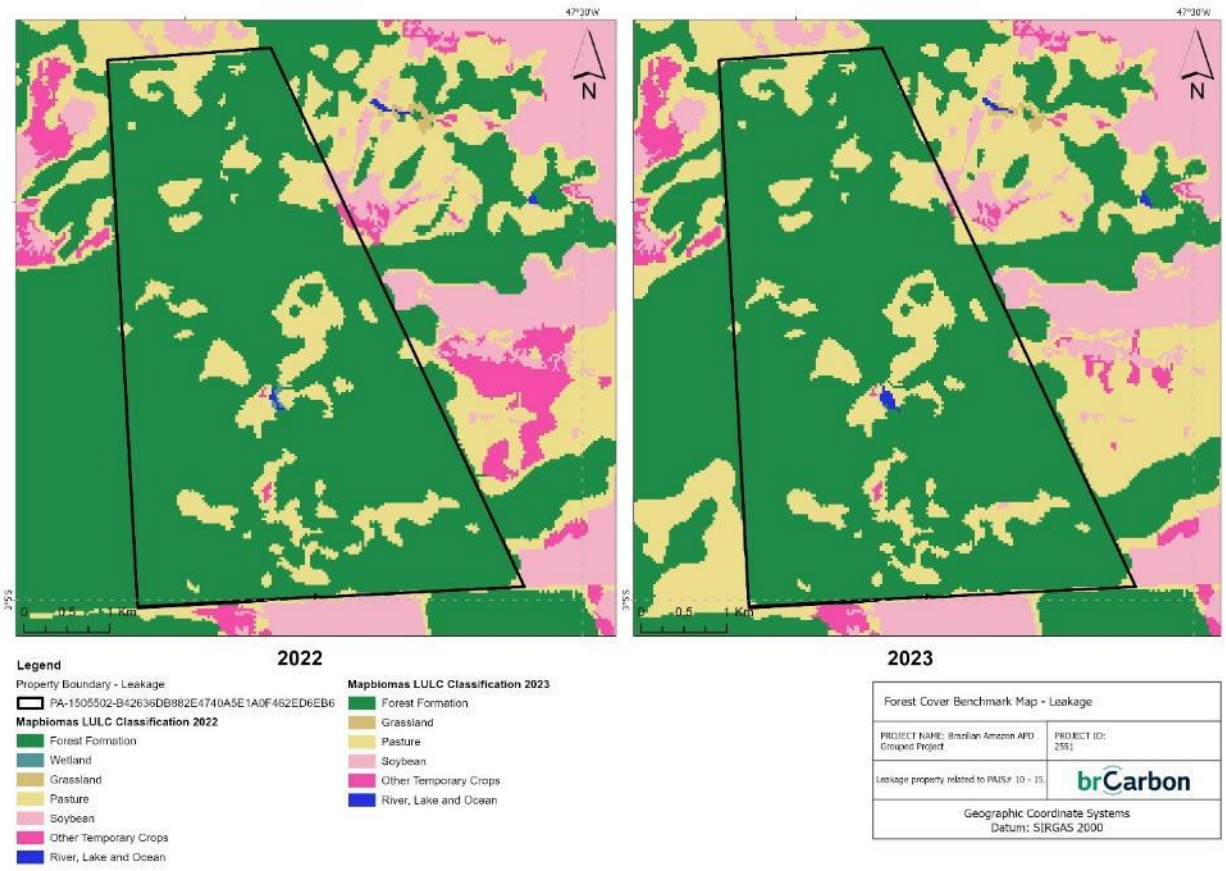


Figure 127. Leakage Property related to PAI#10 to PAI#15.



Figure 128. Leakage Property related to PAI#10 to PAI#15.

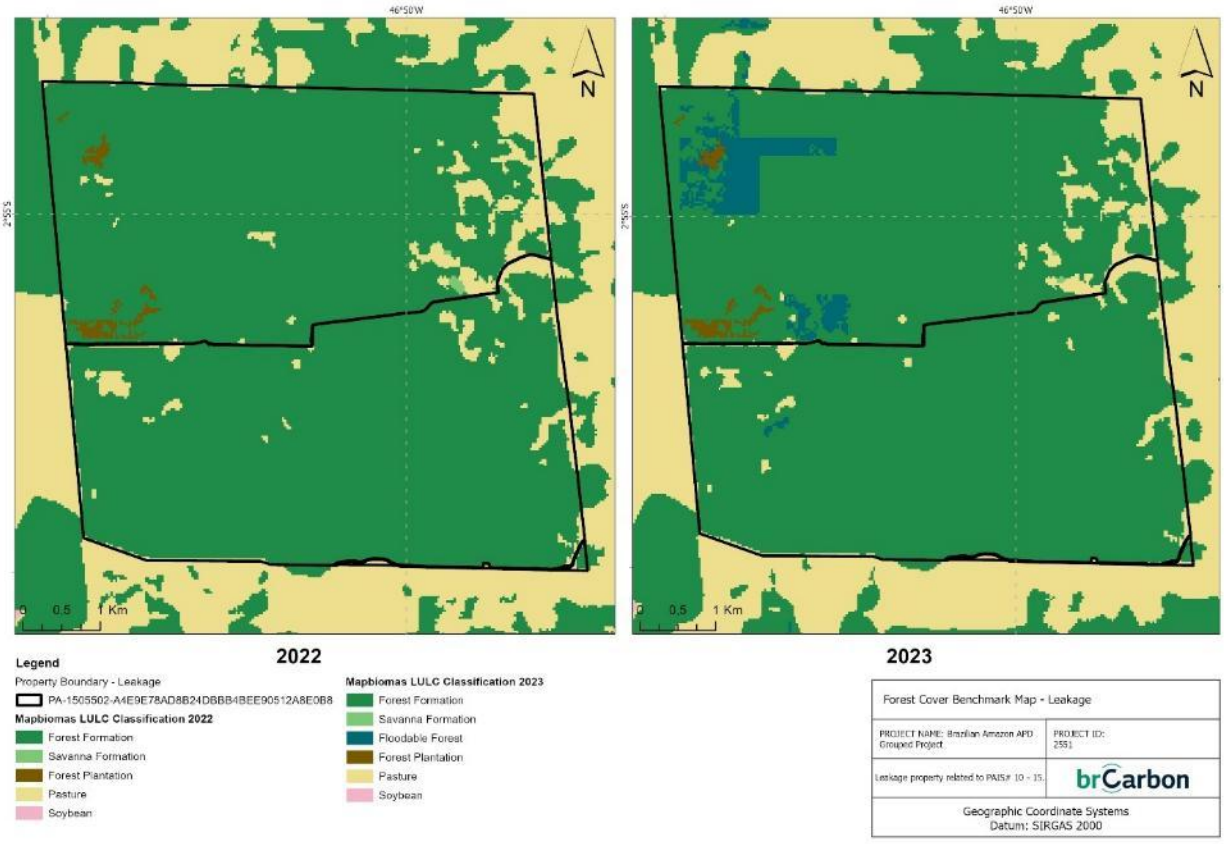


Figure 129. Leakage Property related to PAI#10 to PAI#15.

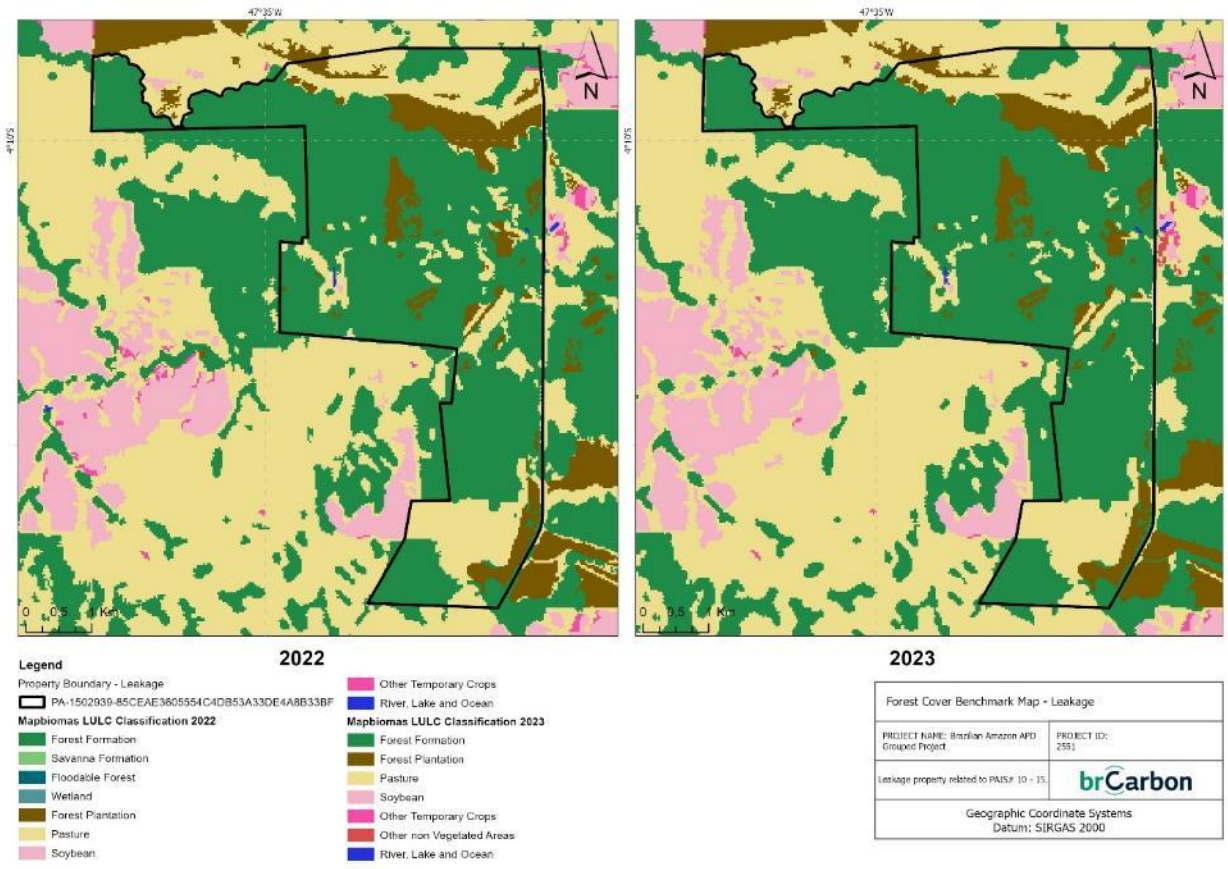


Figure 130. Leakage Property related to PAI#10 to PAI#15.

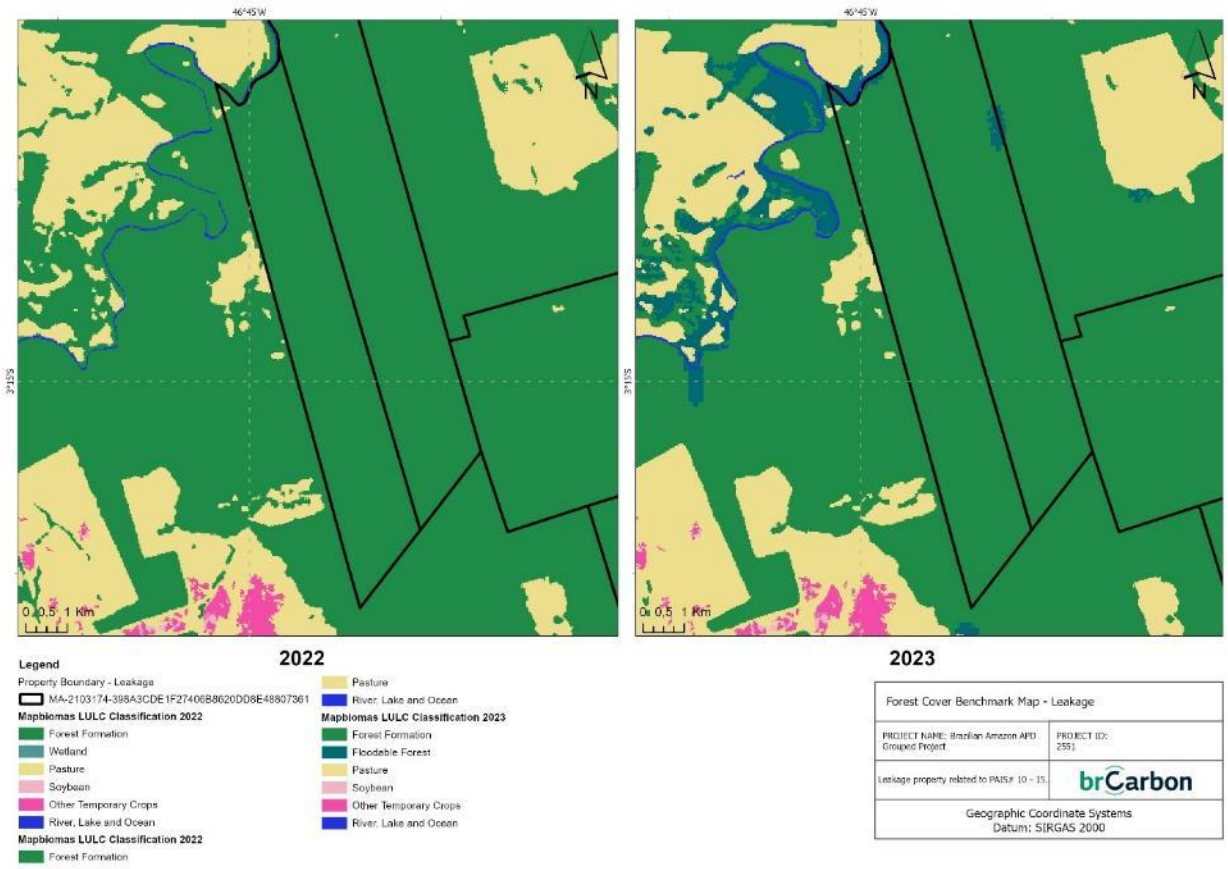


Figure 131. Leakage Property related to PAI#10 to PAI#15.